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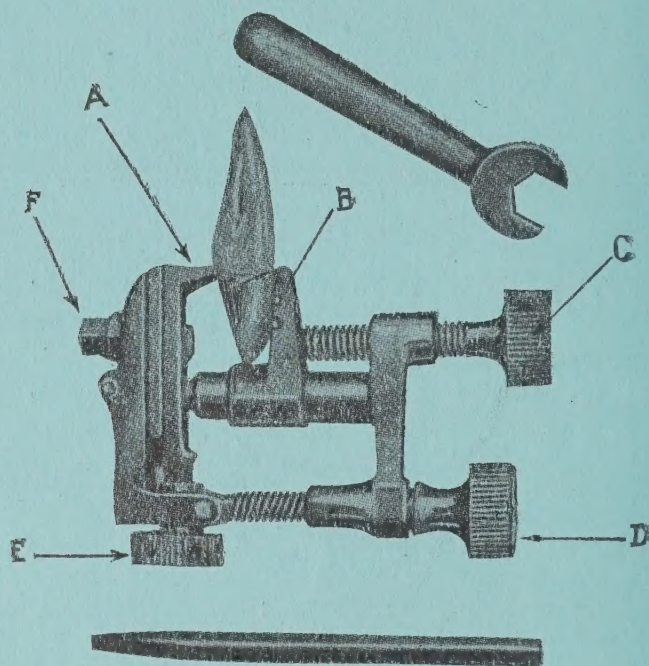
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Opening of the Dental College

The Royal College of Dental Surgeons of Ontario opened its session of 1910-11 on Monday, 26th October, with the following attendance:

Senior Year 46, Junior Year 43, Sophomore 52, Freshman 54.

It will be seen that notwithstanding the four years' standard that has been maintained by the R. C. D. S., only of all colleges the attendance is keeping up. The large influx of freshmen students must be gratifying, indeed, not only to the Board of Directors, but to the profession at large. The high standard of qualification as well as the four-year course, is attracting an exceptionally high-class body of men to enter the study of dentistry. As in the past the attendance from the East is out of proportion to the West. The graduates in the Maritime Provinces have been mostly trained in American Colleges, and many of the present day students are seeking their Dental Education at Baltimore and other colleges south of the 49th parallel of latitude. If the college in Nova Scotia cannot hold the students from the East, surely an energetic effort by the R.C.D.S. would succeed in attracting them. A magnificent building and equipment (excelled only by two in the States), a large and able corps of professors and demonstrators, and a system owned and completely controlled by the profession itself, present no small attraction. An effort to enlist the sympathy of the dentists in the East ought to bring results. If the Department of Publicity at the College would not be too modest and hide its light under a bushel, many more students would come from the East to Toronto. It is to be hoped that the project of Post-Graduate courses that has been mooted from time to time, will shortly have the favorable consideration of the Board. In the present day, when the changing and improved methods of dentistry are so apparent, there are many practitioners who would avail themselves of the opportunity that an up-to-date Post-Graduate course in Toronto would afford, so long as it was as efficient as could be procured in Chicago or Philadelphia.

F. N.

CAST METALS IN DENTAL ART

By M. O. SOLBRIG, D. D. S.

HISTORY.

The First Dentures cast in Dental Art.

The employment of a fusible metal for the construction of dental cases is not new. But prior to the introduction of instruments and of special furnaces for the fusion of precious metals—the best for dental prosthesis—individual practitioners who at the outset had recourse to the casting method were able only to employ low-fusing metals, such as tin and its alloys.

Tin dentures were the earliest among cast plates. They offered such slight resistance that they momentarily ran the risk of being put out of shape, even when they were constructed of great thickness. They were prepared exclusively for the mandible.

Efforts were soon made to remedy this insufficient resistance of tin by adding cadmium, zinc, antimony, or bismuth to it. The results thus achieved were scarcely satisfactory.

In 1856, Dr. A. Blandy, of London, patented a special alloy composed of silver, bismuth, and a little antimony, which he called "cheoplastic metal."

At this period, vulcanite being altogether unknown, the cheoplastic method appeared destined to pass into dental practice up to a certain point. The introduction of vulcanized rubber, however, into mechanical dentistry caused the cheoplastic method to be almost completely abandoned, and the competing alloys of Wood and Weston shared the same fate.

Construction of a Cheoplastic Metal Denture.

We here give, in summary, the method indicated by Dr. Blandy:—After having mounted the denture in wax, exactly according to the method of making it in vulcanite, it was put in plaster of paris, with the teeth downwards, in the lower half of a flask made for this kind of work.

The plaster having set, its surface was lubricated, the upper half of the flask was placed in position and filled with investment material (plaster and pumice).

The two halves of the flask were separated, the wax was removed, and by means of a penknife three trenches were dug, which formed three canals when the two halves of the flask were brought together; the middle canal, at the neck, served for the pouring of the metal, while the other two were used as vents for the escape of the air from the mould.

To heat the flask and its ring, three parts of it were plunged in a sheet-iron receptacle filled with sand, and set there in such a manner that the posterior portion only (neck and vents) was out of the sand. It was then heated on a gas burner up to 150° Centigrade (302° Fahr.), and the fused metal was poured rapidly into the neck.

When the flask was well cooled, the two halves were separated, and the cast denture was thus laid bare.

The denture was completed by cutting off the casting burrs with a saw, and polishing it in the lathe.

It is only for the purpose of setting before our readers a very short account of the technique of cheoplastic dentures that we have furnished the above details; the method became practically obsolete when vulcanite was introduced, but it is interesting to find that the same method, without appreciable modifications, was employed fifty years later for the pouring of mandibular dentures in tin, as set forth by Dr. Jung, of Berlin, in a study published in *LeLaboratoire* for April, 1906.

A few years later than 1856 numberless attempts were made, in all parts of the dental world, to revive attention to dentures cast in metal by the introduction of aluminium for prosthetic work.

To the late Dr. James B. Bean, of Baltimore, we owe the first method used for the construction of cast aluminum plates. He had in the beginning to struggle against very great difficulties. Thus, when he first poured the molten aluminum, directly upon the teeth or sectional pieces, they invariably melted. Moreover, the aluminum exhibited very considerable contraction, and its lightness made the pouring into the mould difficult and slow.

Dr. Bean vanquished his difficulties (1) by modifying the mode of union of the teeth to the flask—that is to say, by interposing between the teeth and the flask a layer of Wood's alloy; (2) by making, with the aid of the original model, a second plaster of paris model, and then a third model from the second one. He obtained in this way three expansions of plaster which compensated for the contraction of the aluminium. Finally, by raising the casting orifice, he overcame the difficulty of casting.

In making the third model, he poured a mixture of plaster and powdered pumice into the same mould, and this was put into the aluminium flask in order to form a true mould.

Casting of Aluminium under Pneumatic Pressure (Carrol).

Following up these researches with the same end in view, Dr. C. Carrol constructed an apparatus with which he obtained some fine dentures by casting the aluminium under pneumatic pressure.

The preparation was the same as for the construction of a tin denture. But to obtain pneumatic pressure it was necessary to have a special apparatus, in which a plumbago crucible, placed under the mould, was united by a tube with an india rubber bulb. By preference, an alloy composed of 55 parts of aluminium and 45 parts of silver was employed, because it poured better than aluminium alone and offered greater resistance to the buccal fluids.

In addition, Carroll claimed to have reduced to a certain degree, by this alloy, the contraction of the aluminium. The employment of this method did not prevent the casting of the metal direct upon the teeth.

Other practitioners tried, both before and after the invention of Dr. Carroll, to conquer the slowness of the pouring, by injecting the metal in a pasty or rather liquid state, by means of more or less complicated apparatus. It was not found, however, that the results obtained were very satisfactory.

First Application of the Wax Dispersion Method in Dentistry for the casting of Aluminium (Pillette).

In order to achieve work at once more rapid and less subject to accidents, M. Pillette adapted to Dr. Bean's methods several modifications, the chief of which were: the over-casting with gelatine of the original model, and the casting of the metal "by wax dispersion" in a single mould in lieu of casting into a mould which was composed of several parts.

This method attempted the complete envelopment in the plaster of paris investment of the model of the denture set up in wax, excepting the casting orifice and the vents, and the subsequent destruction of the wax by means of heat. According to the nature of the case, the teeth either formed an integral part of the denture, or they were fixed in the flask by means of vulcanite after the casting was made.

First Cast Gold Plates.

The various metals and alloys which were employed up to Pellette's time did not afford entire satisfaction, and an effort was made to substitute gold for them.

This is how a denture was constructed in cast gold, according to Jüterbock:—

After having modelled and tried-in, in the usual way, the wax form, which possessed a minimum thickness of two millimetres, the teeth were removed from it, and the wax was trimmed according to the final form which the gold plate was to assume. Then a mould of plaster of paris was poured upon it. This done, the wax was burnt out, and into the empty space thus obtained a low-

fusing alloy was poured. The metal denture produced in this way was cleansed and finished, after trial in the mouth. The plate so constructed served to form the mould in the sand; for this purpose the same flask was used as for the aluminium, and the same method was carried out, care being taken not to deform the sand at the moment when the metal model was withdrawn. The two parts having been separated and two openings having been formed as before mentioned, the drying was accomplished in such a way that no moisture remained.

For the casting there was no necessity to heat the mould. A little tinfoil was added to the gold, to prevent porosity, and some flux to free it of its impurities. Twice as much gold was melted as was required for the denture.

First Application of the Wax Dispersion Method for Gold Dentures. Ollendorf's Method—Trottner's Furnace.

Dr. Ollendorf elaborated, towards the end of 1905, a method and an apparatus for the wax dispersion method, which he described the same year, as follows, in the *Journal Für Zahnheilkunde*:—

After having obtained two mouldings of the impression, one in plaster of paris and the other in an incombustible material composed of one-quarter of graphite, one-quarter of marble dust, and half of plaster of paris, the wax plate was prepared in the usual manner. Before putting it in investment material a kind of trident in wax was adapted to constitute the casting orifice, eight centimetres long, to augment the force of gravity during the casting of the metal. The wax was put in investment material in a cylinder with a hinge.

When the investment mixture was hard, the mould was heated to redness for one hour, so as completely to burn out the wax. For this purpose a Trottner's furnace was employed, specially constructed to Dr. Ollendorf's instructions.

For the casting, the cylinder in plaster of paris was raised to a temperature of 850°C . ($1,562^{\circ}\text{F}$.), where as the gold was heated to $1,300^{\circ}\text{C}$. ($2,372^{\circ}\text{F}$.) When the molten metal had been brought to a white heat, after at least two hours of heating, it was slowly emptied into the mould, which was cooled by degrees upon the furnace itself—a process which demanded a further two hours. The denture was then disengaged, the casting button was removed, and the gold was polished.

Ollendorf's method had realized an incontestable advance, but the applications of his method were, relatively speaking, not numerous. The wax dispersion method only commenced to make headway in the dental world when the definite triumph of the gold inlay was assured.

First Inlay cast by the Wax Dispersion Method by M. O. Solbrig.

It was on the 1st December, 1906, before the American Dental Club of Paris, that the author described his method for the first time.

This method consisted of the application of a piece of gold leaf No. 30 on the floor of the cavity. The missing parts of the tooth were then reconstituted in sticky wax. To the block thus formed a sort of footlet in wax was added at the least important point, which may be described as the casting orifice. The whole was put in an investment material of fireclay and plaster of paris, and the wide extremity of the future casting orifice was left exposed. After having burnt out the wax, pure gold was cast into the mould.

Nothing further was required, after the cooling down of the casting, but the sawing off of the casting button, to obtain an inlay in gold which exactly fitted the cavity, without projecting beyond the edges. No re-touching was necessary, even for articulation.

Dr. Burt, of Paris, modified and simplified this method as follows:—He cut in the upper portion of the investment a little cup-shaped space quite close to the funnel; he also cut at the base of the mass a flattened facet, which with the base formed a very obtuse angle, and he then diminished the thickness of the investment in the neighborhood of the inlay. In heating the mass thus prepared, by means of the blowpipe, the heat quickly penetrated up to the centre. The operator thereupon placed pieces of gold in the fireclay cup and melted them with the aid of the blowpipe. When the gold was fused the mass of the investment was tipped upon the facet, and the gold by its own weight fell into the funnel and then into the mould. Thus Dr. Burt did away with that part of the manipulation which consisted of melting the gold in a crucible, taking up the crucible with tongs and pouring the gold in the mould.

The author adopted these modifications for perfecting his system, but he preferred the employment of a gas furnace for the heating-up of the investment material. When the desired degree of heat was reached, the whole was inclined, and the casting of the inlay was completed by this simple movement.

M. Platschick, of Paris, further developed the method just described by the construction of an electric furnace, and succeeded, thanks to an ingenious arrangement, in melting and casting almost automatically.

The furnace consisted of two parts—two electric crucibles. They were constructed in such a way that the lower part could be kept at a temperature of from 300 to 400 degrees Centigrade.

(572° to 752° F.) below that of the upper part. The lower part was designed to receive the investment with the inlay in wax, and the upper part contained a crucible the bottom of which had a hole in it to receive a plug of refractory fireclay.

When the gold was melted it was only necessary to remove the mould from the investment to effect the casting of the inlay.

In these various methods the construction of a matrix in gold or platinum was still indispensable, and it was Taggart, of Chicago, who first did away with it, by the application of pneumatic pressure in combination with the wax dispersion method. His merit lies not only in the ingenious invention of his apparatus, but also, and, above all, in the influence which he exercised upon many colleagues with inventive minds, who were led by his enthusiasm and his success to make research in the same direction. Before his apparatus could be procured several other systems were pressed upon the notice of the profession, but notwithstanding this, Dr. Taggart must without doubt be considered the pioneer of the present period, as regards the casting of metals.

We are obliged, however, to mention various other ingenious inventions, of not less value than Taggart's, which appeared in the same year. They may be divided into five principal groups, in accordance with the force employed:—

1. Pneumatic force;
2. Centrifugal force;
3. Atmospheric pressure (vacuum);
4. Mechanical pressure;
5. Steam pressure.

The wax dispersion method is employed for the construction of the mould in all these systems. All of them utilize a cavity in the investment material as the crucible for the fusion of the gold. They all use a canal (sprue) of small diameter to unite this crucible and the mould. The gold cannot run through this canal (sprue) except by means of pressure, and it is solely by the nature of the pressure that these systems are differentiated.

PNEUMATIC FORCE.

In this system we employ, for the casting of metals, pressure exercised by compressed gas. In this category must be placed all the systems in which some receptacle is used which contains air or gas under pressure. In order to fill a cylinder of compressed air a force pump is used—a bicycle pump, for example.

Dr. Taggart, the inventor of the first apparatus of this kind, employs liquefied nitrous oxide gas—gas obtained by a chemical process.

In this group must likewise be mentioned pneumatic pressure obtained by the explosion of detonating power.

This kind of apparatus, which utilizes one of the principles named in this division, is more or less complicated, and necessitates a reservoir with pressure gauge, tubing, valves, taps, and several hermetic unions—parts many and varied, liable to get out of order, or requiring special supervision to keep them in good working order.

The pressure employed is from one to three atmospheres, or more.

To be able to measure the pressure in the reservoir by means of a gauge appears at first sight to be a quality which especially belongs to this kind of apparatus. But if we reflect upon the obstacles which compressed air has to surmount—namely, the resistance of the air in the interior of the mould driven through the investment material, the losses owing to want of hermetic closure between the bottom and the cylinder, between the cylinder and the investment material, etc.—the pressure indicated by the gauge is far from being the same as that exercised upon the molten metal. And, contrary to what one might believe, augmenting the pressure does not augment the chances of the success of the casting.

Another difficulty of this method is found in the fact that the air under pressure may penetrate into the mould either through a weak part of the investment material, or through the porosity in it, and thus counteract the casting of the metal.

CENTRIFUGAL FORCE.

In the class of apparatus which we are about to study under this category, centrifugal force is employed—a force which is exercised upon a revolving body, and which tends to drive it from the centre. This ingenious and simple system was first utilized by Jameson. Other apparatus have since been introduced, either to be fixed to an operating-room lathe or to be worked by hand.

It is almost impossible to calculate or to regulate the pressure in this class of apparatus, for the force increases by reason of the cubic weight of the metal employed, of the radius and of the velocity of the rotatory movements. It would be necessary to be able to change the different conditions at will to obtain the same results with little inlays and with large plates; with a light metal, or with a metal possessing a very high specific gravity. For the beginner, there is the risk of losing the precious metal, and also of burning oneself with the metal while it is in a state of fusion, owing to awkward manipulation.

VACUUM.

In this class of apparatus, first put into practice in the Elgin apparatus, we utilize the vacuum produced in the cavity of the mould by a suction pump, thus employing atmospheric pressure to effect the process of casting. Continuous pressure; so necessary for the setting of the metal, which gives it its elasticity, ceases at the moment when the lower portion of the mould is filled. This system has the advantage of sucking out the major part of the air in the interior of the mould, which might counteract the casting of the metal; nevertheless, the pressure obtained will always be less than an atmosphere. Moreover, the metal will always tend to run from above downwards, and the ascending parts will be difficult to fill.

Dr. Beale has made useful modifications in this system, but on account of the recent date of his discovery we have not been able to study his apparatus; however, this void will be filled by the inventor himself in the course of a further communication.

MECHANICAL FORCE.

Mechanical force has been employed by Aquilhon de Sarrau for constructing gold blocks. His method was very primitive, and the results left something to be desired; the molten gold on being cast into the mould assumed a spherical form, and was flattened with a wooden mallet.

Hollingworth has likewise employed this system for obtaining massive triturant surfaces on gold crowns.

Several existing presses in which moldine, or potter's clay, is employed, are supposed to utilize only mechanical force. But the moisture contained in the substances employed is the chief source of the pressure, and for this reason this kind of press must be put in the class of "steam pressure" apparatus.

STEAM.

In this system, which was carried out for the first time in the Solbrig Pliers, steam pressure is produced by the influence of the heat of the fused metal upon moistened asbestos at the moment of casting. The simplicity of the method and the automatic production of the pressure are its great advantages. In this system the air holder and the tubings, with valves and taps, are done away with. A pressure gauge and the regulation of the pressure are also quite superfluous, since the pressure is regulated automatically by the change of the factors which enter into the formation of steam. Thus, for a small inlay, owing to the small amount of metal, and the restricted quantity of moistened

asbestos employed, we have less pressure than for the casting of a large plate, for which we employ a comparatively large mass of fused metal, and large asbestos discs for the production of a greater volume of steam. The pressure thus obtained in these two cases varies between two and three atmospheres. The hermetic closure operates at the moment itself of the production of the pressure, and the casting is accomplished instantaneously.

No part of the pressure is lost, because the steam is produced immediately above the fused metal and in the limited space of the funnel-shaped opening which forms the crucible. The pressure cannot enter into the interior of the mould except through the casting canal (now commonly called the sprue); it thus forces the molten gold to assume the shape of the mould, down to the smallest details. The walls and the base of the cylinder not being subjected to the pressure of the steam, the air in the interior of the mould is able to escape, without difficulty, through the investment material.

For objects of small dimensions the fine coating material used as a single investment offers sufficient porosity. For larger pieces, as in the case of a large plate, the escape of the air from the interior of the mould is facilitated by the employment of two investments—the fine coating material in contact with the denture to give it a smooth surface, and the embedding material, which is coarse in grain, and, consequently, very porous, for filling up the cylinder. The production of steam continues for a few seconds, which is necessary not only for effecting the casting of a large denture, but it is also equally important for maintaining the molten gold under pressure until it has completely set.

This explains why metal cast under pressure is appreciably elastic, and, on the other hand, why metal not cast under pressure is apt to break and entirely lacks elasticity.

The pressure is instantaneous and sharp. This is of great importance in the casting of large, thin plates, because in such cases, in order to obtain perfect results, we must cause the gold to flow into the finest and most distant parts of the mould before it can set.

Only a single casting orifice (sprue) is necessary, both for the smallest inlays and for the largest plates, and, since vents are no longer used, the denture comes from the casting process in such a condition that it scarcely needs any trimming.

Casting under pressure has rendered marked service to the profession. Its application to operative dentistry is well known. Inlays, pivot teeth, crowns, bridges, etc., can now be constructed by this system with a perfection and a certainty of good results such as were formerly impossible.

But dental prosthesis has also undergone a revolution in regard to the construction of plates which in its results now leaves far behind the ancient methods. By casting under pressure we are able to obtain a plate which possesses absolute perfection of fit, such as we have never yet been able to achieve.

Moreover, we can make a plate of any thickness, without interfering in any way with the reproduction of the finest details. Equally, it is possible to employ platinized gold—a gold which offers exceptional resistance, and is almost impossible to strike-up. The results are always perfect.

With special precautions, we can cast directly upon porcelain.

Further, the cast plate will not change in form, like a struck-up plate, under the influence of heat; as, for example, when we are obliged to solder on bands.

The applications of this process are only limited by the limitations in skill of the operator. We are still in the infancy of this new branch of our art, but the daily employment of this method, and the results obtained therefrom, give it such a value that it will from henceforth be difficult to dispense with it in the exercise of our profession.



Messrs. Claudius Ash, Sons & Co. (the oldest dental manufacturing company in the world) opened their fine new premises, Nos. 11-13 Grenville Street, Toronto, on Sept. 6th, 7th and 8th, with a Depot Clinic that was well attended. Dr. A. McAlpine, of Bradford, Pa., the Schoenbeck cement expert, delighted the many callers with his specimens of actual work done in the mouth as well as the work done at the clinic on various patients that were presented to him. Representatives of other manufacturing companies were on hand to demonstrate lines of more than passing interest to the profession. Messrs. Ash & Sons' new quarters are the finest in Canada, both in point of appearance and in arrangement, and their facilities for executing orders are unequalled. The basement, ground and first flats are occupied by them and give ample accommodation for the very large and varied stock that is carried. One of the most interesting features of the warehouse is a beautiful model operating room equipped with the most up-to-date furnishings. The staff has been greatly increased to insure the most careful handling of business.

PERSONALS

Dr. Wallace Seccombe, who has been practicing for many years in Carlton St., Toronto, has taken Dr. T. B. Carmichael ('09) into partnership. The firm will be known as Seccombe and Carmichael.

Dr. G. D. Smith has removed from Oil Springs to Port Dover, Ont.

Dr. G. L. Palmer has resumed the practice of dentistry at the corner of Bloor St. and Spadina Rd., Toronto.

Dr. Frank Pollock ('08) has sold his practice in Listowel to Dr. G. E. Long. Dr. Pollock intends to reside in the Golden West.

Dr. Sangster Lederman ('10) has started practice in Berlin, Ont.

Dr. J. S. Brooks has removed from Little Current to West Toronto.

Dr. E. Lane Kenny has removed from Brockville to Bathurst St., Toronto.

Dr. R. W. Frank ('09), the all-round athlete, accompanied the Queen's Own Rifles on their trip to England.

Dr. W. A. Scott, of Toronto, returned from a trip to the West.

Statistics from Russia show that during the past few years 75 per cent. of the dental students enrolled at the colleges are females.

Ash & Sons are offering a new and improved form of roughened Crown Pin in base metal, to fit either an Ash or Davis Crown.

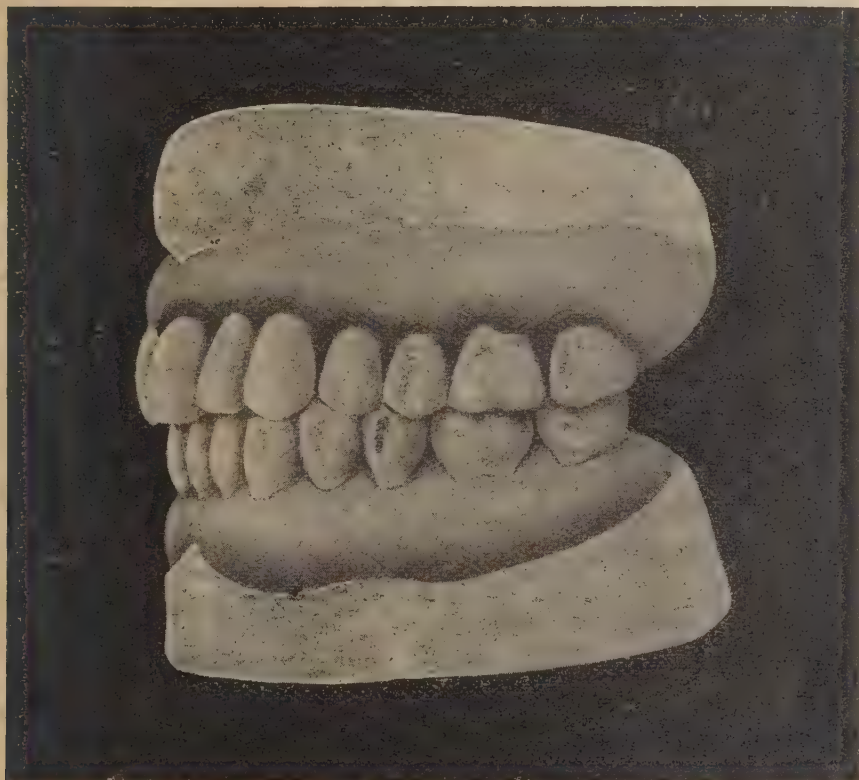
Dr. Sydney Wollatt, who has been in Montreal for the past year, has opened an office at No. 3 College St., Toronto.

It is pleasing to note that the daily papers are taking up the question of proper care of the teeth of children in our schools. Push along the good work, the dentistry of to-day is preventative dentistry.

Dr. H. M. Little is opening an office on Parliament St., Toronto.

An excellent method of bleaching ping rubber is to run it through C. P. Sulphuric Acid, and then immediately place it in cold running water.

ASH'S MINERAL TEETH



With the extension of the study of anatomical articulation, we have been asked to supply improved teeth, and have added to our series of patterns certain moulds of Bicuspids and Molars, the proportions of which have been designed to meet the requirements of modern dental prosthesis.

They will be found to have proper correspondence between the cusps and fossæ of the upper and lower sets respectively, and they have good width in their bucco-lingual measurements.

The lingual cusps of the uppers are well developed, but not to an extent which would cause locking during the lateral movements of the mandible.

ASH'S MINERAL TEETH—*continued*

The above illustrations show the types of Bicuspids and Molars which lend themselves most easily to perfect articulation. In many cases they can be fitted as supplied, without the need for any grinding.

This is not a theoretical claim, but one which has been proved by experience.

These patterns of Articulated Bicuspids and Molars are made in Pin Teeth and in Diatorics, in sets of 16, known as Moulds 228 and 230.

CANADIAN PRICES

ASH'S MINERAL TEETH

Below will be seen the prices at which these teeth are sold in the Dominion. They illustrate, if the Dentist will but compare them with those of other manufacturers, the great saving to be effected by using Ash's teeth. The naturalness of shades and moulds and the fact that they are the only teeth in the world to-day that can be successfully polished after grinding, make them the most adaptable and valuable teeth on the market. Ash's Teeth look the least artificial in the patient's mouth and cost *you* less money than other Platinum pin teeth.

COMBINATION SETS.

Per Set	\$ 1.34
17 Sets	22.28
84 "	104.07
167 "	197.06
417 "	471.21

LONG PIN FACINGS.

Each	\$.20
100 Teeth	18.00
500 "	87.50
1000 "	170.00
2500 "	400.00

ASH'S DETACHABLE POST CROWN.

Each	\$.12
Per 100	10.00
Per 500	47.50
Per 1000	90.00

PLAIN TEETH FOR VUL- CANITE WORK.

Each	\$.17
100	16.50
500	77.50
1000	150.00
2500	362.00

DIATORIC TEETH.

Per Set	\$.56
36 Sets	18.90
72 "	35.28
178 "	81.32

ASH TUBE TEETH.

Each	12c
------------	-----

Crown Case given with each purchase of 200 crowns.

Above prices subject to 5% for cash, if purchase amounts to \$25.00 or over.

Canadian Prices Ash's Mineral Teeth

	Single	100 Teeth	500 Teeth	1,000 Teeth	2,500 Teeth
Flat Backs	.20	.18	.17 $\frac{1}{2}$	.17	.16
Plain Vulcanite	.17	.16 $\frac{1}{2}$	.15 $\frac{1}{2}$	.15	.14 $\frac{1}{2}$
Diatoric Sets of 28s.....	.04	..	.3 $\frac{3}{4}$	.3 $\frac{1}{2}$	.3 $\frac{1}{4}$
Diatoric Sets of 14s.....					
Diatoric Sets of 8s.....					
Wedge Molars, Sets of 4s.....					
Wedge Molars, Sets of 4s.....					
Dovetail Bicuspids and Molars.....					
Combination Sets of 14s.	\$1.34	..	..	..	..
Tube Teeth with Platinum Tubes....	.25	.20	..	..	..
Tube Teeth without Platinum Tubes. .	.12	.10	..	..	..
Ash Dowel or detached Post Crowns .	.12	.10	.9 $\frac{1}{2}$	.9	..
Dental Alloy Crown Pins, lrg. & sml. .	.25	..	..	..	..
Dental Alloy Crown Pins Bifurcated .	.35	..	..	..	..

Base Metal Crown Pins can be supplied at 5 cents each to fit Ash Crowns.

Above prices subject to 5 per cent. for cash, if purchase amounts to \$25.00. No greater discount allowed on teeth sold at quantity rates.

ASH'S BRITANNIA CHAIR

Range, 13 inches.

Highest position of Seat, 31 inches.

Lowest position of Seat, 16 inches.



Chairs, Ash's Britannia, Leather, with Wilkerson Head
Rest, Linoleum Foot Board\$150 00

Net Cash 143 00

Chairs, Ash's Britannia, Leather, with Roll Head Rest,
Linoleum Foot Board 145 00

Net Cash 139 00

Chairs, Ash's Britannia, Plush, with Wilkerson Head
Rest 145 00

Net Cash 139 00

Chairs, Ash's Britannia, Plush, with Roll Head Rest..... 141 00

Net Cash 135 00

With Rubber or Cork Foot Board, add, each..... 7 00

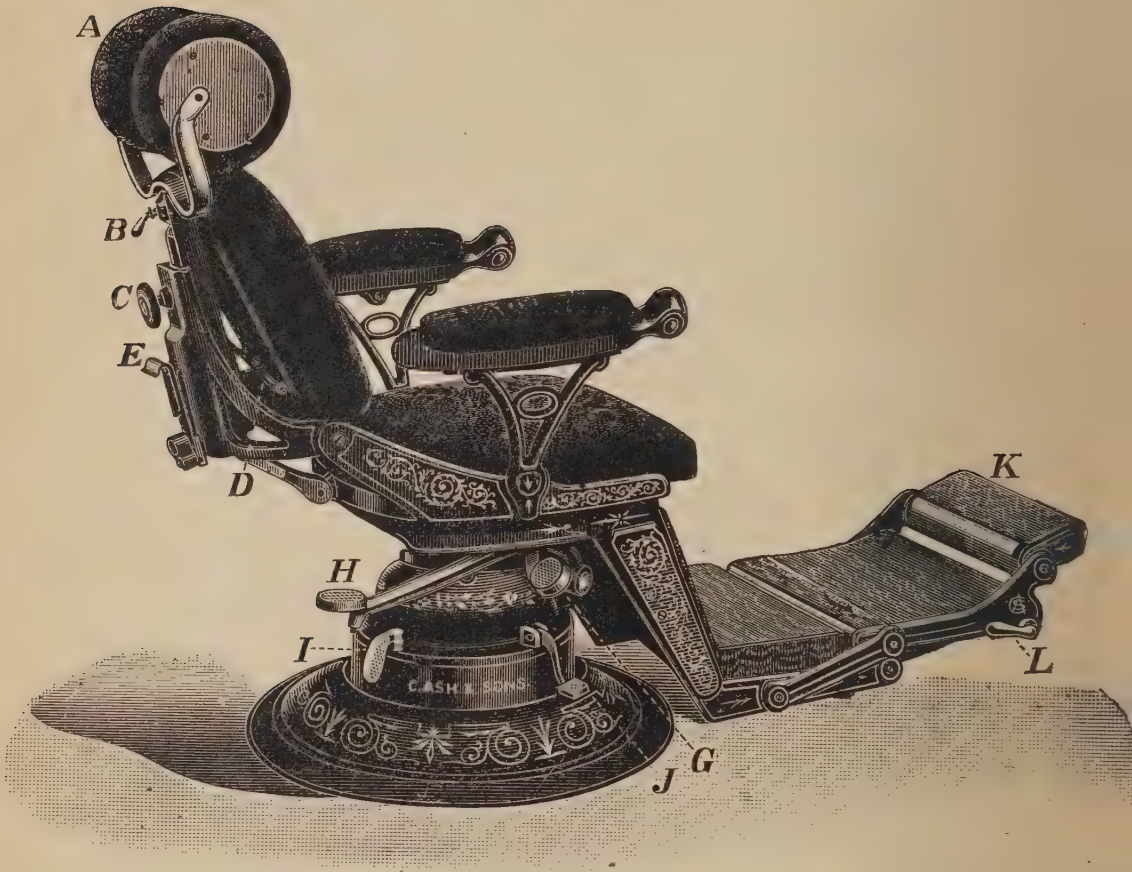
Chairs in White Enamel, add \$12.00 to above gross prices.

ASH'S LONG RANGE CHAIR—Fig. 2

Range, 19 inches.

Highest position of Seat, 35 inches.

Lowest position of Seat, 16 inches.



Chairs, Ash's No. 2, Long Range, Extension Foot Rest, Leather, with Wilkerson Head Rest, Linoleum Foot Board	\$194 00
Net Cash	186 00
Chairs, Ash's No. 2, Long Range, Extension Foot Rest, Leather, with Roll Head Rest	188 00
Net Cash	180 00
Chairs, Ash's No. 2, Long Range, Extension Foot Rest, Plush, with Wilkerson Head Rest	191 00
Net Cash	183 00

Chairs, Ash's No. 2, Long Range, Extension Foot Rest, Plush, with Roll Head Rest	185 00
Net Cash	177 50
Chairs, Ash's No. 2, Long Range, Extension Foot Rest, Leather, Linoleum Foot Board, Roll Head Rest, white enamelled	205 00
Net Cash	195 00
Chairs, Ash's No. 2, Long Range, Extension Foot Rest, Leather, Linoleum Foot Board, Wilkerson Head Rest, white enamelled	211 00
Net Cash	200 00
With Rubber or Cork Footboard, add, each.	7 50

The Roll Head Rest, as per illustration, conceded to be the most satisfactory Head Rest on the market. It is also most durable and easy of adjustment.

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ASH'S "C" STYLE CABLE ENGINE

A—Sliding Collar by means of which the Arm is released when it is set at rest, as shown by the dotted lines in the illustration.

Engine with No. 7 Hand-
piece and Flexible Wrist
Spring\$23 50

Separately:

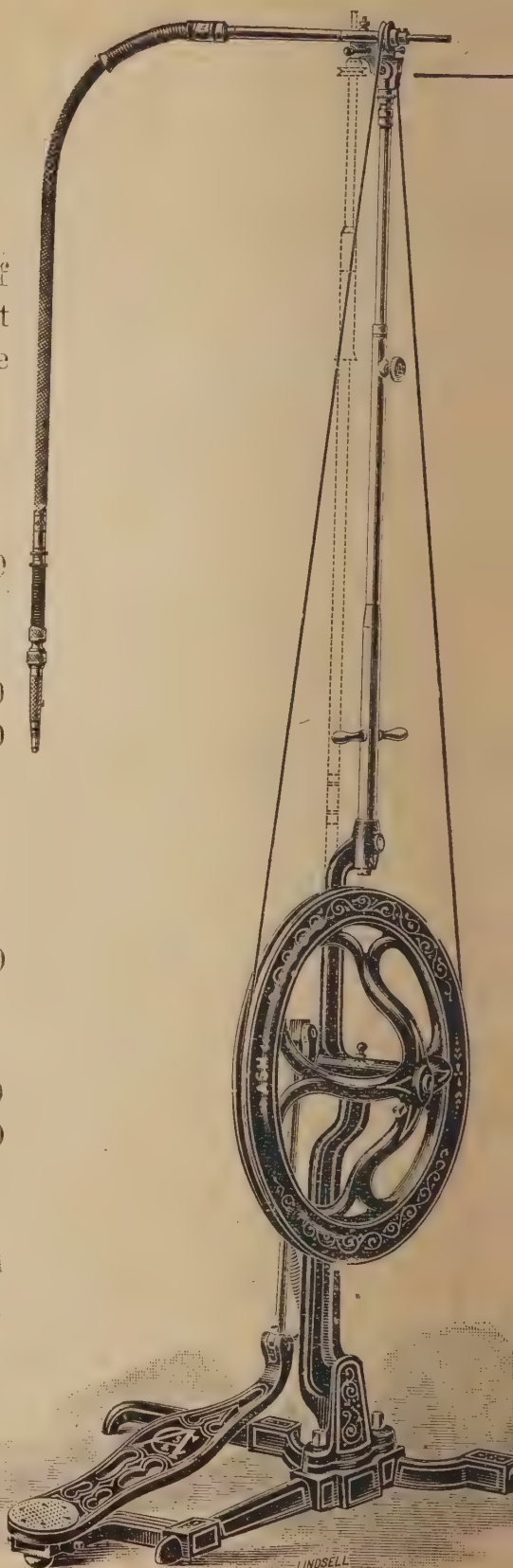
Top part only..... 13 50
—Base and Upright..... 10 00

Engine with No. 7 Hand-
piece, Flexible Wrist
Spring, and No. 2 Slip-
Joint Attachment\$28 50

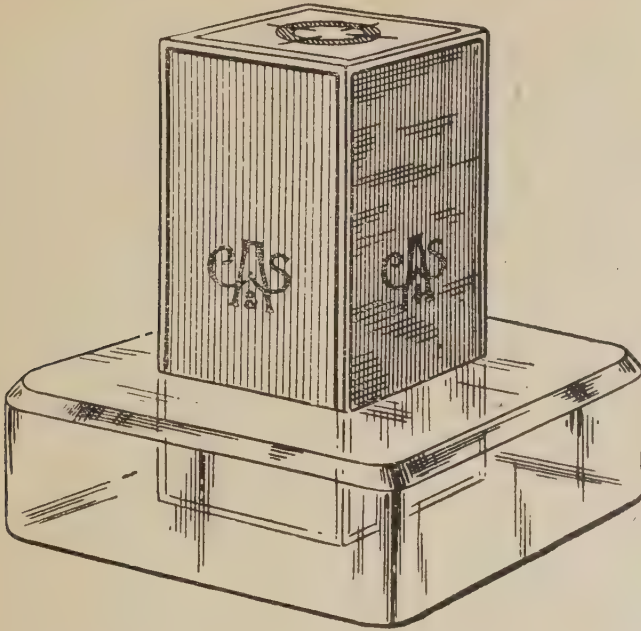
Separately:

Top part only 18 50
Base and Upright 10 00

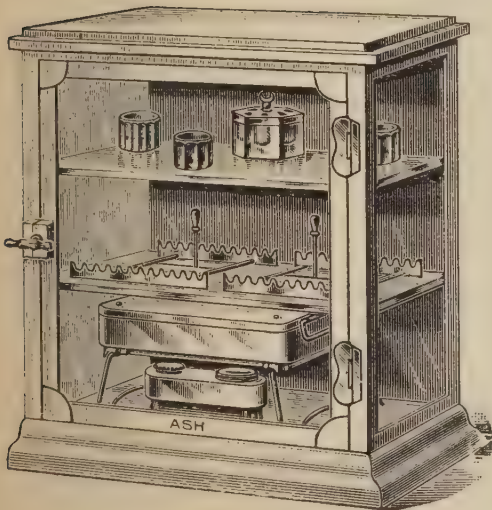
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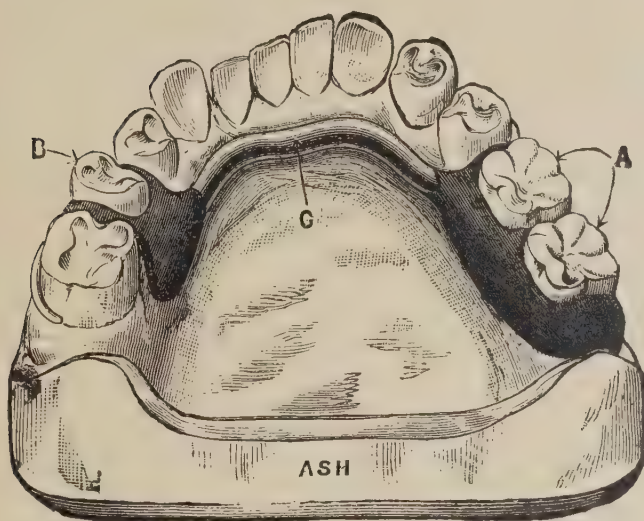
Ash's Crystal Sponge Gold is the outcome of numerous experiments and exhaustive trials. It possesses *all the qualities which are required* in a filling material of this form, and is absolutely *unsurpassed* by any existing Sponge or Mat Gold.

It is being used by many prominent operators with the utmost success, and they are most satisfied with it. Their unsolicited reports concerning it are of such an encouraging nature that we feel sure it has only to be tried to become at once *one of the most popular filling materials yet produced.*

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$\frac{1}{8}$ oz. box	\$ 5 00
12 grain packet	1 25
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Bar Lower Dentures have come into universal demand. Note some of their advantages.

No tendency to push teeth outwards.

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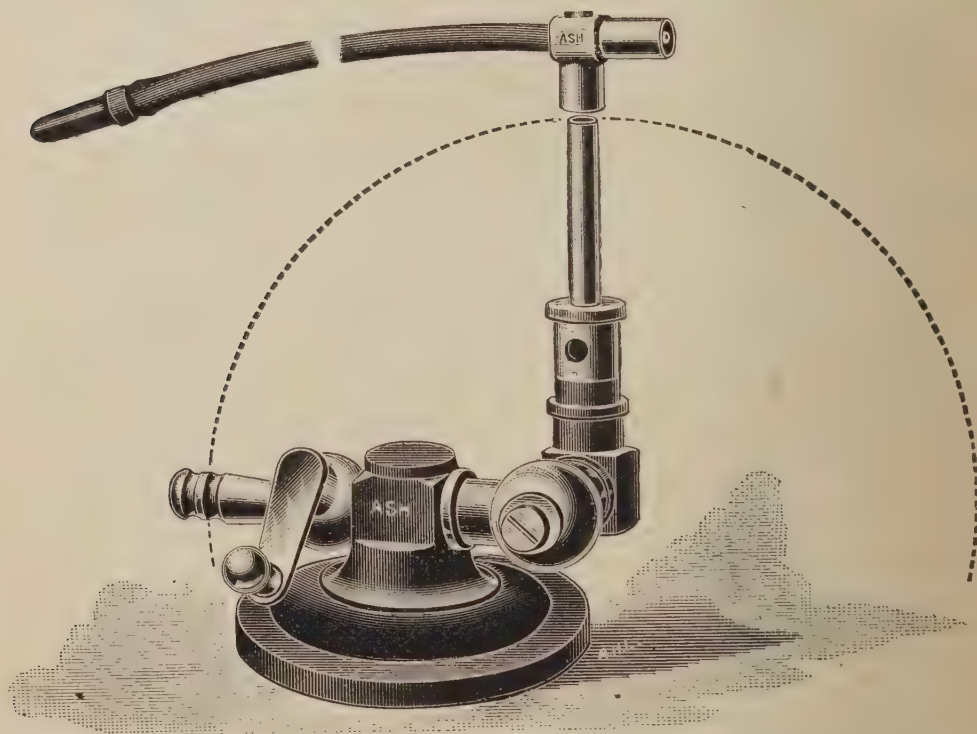
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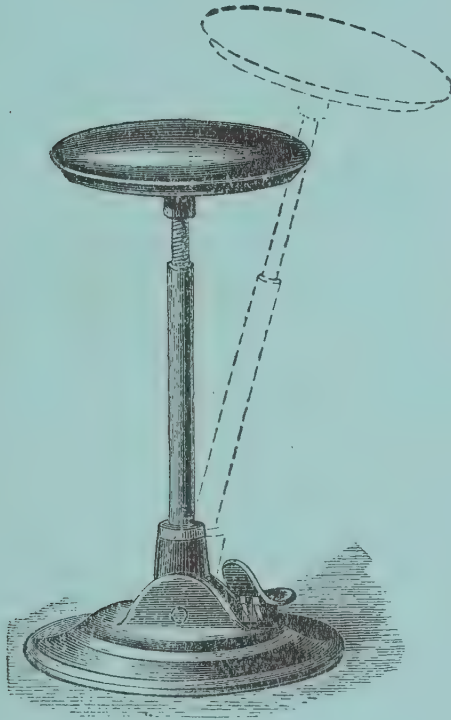
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For the application of this popular Bunsen Burner to dental purposes the Profession is indebted to Mr. Brunton of Leeds. It is extremely handy and effective for modelling, soldering, etc., and the swivel joint at the base admits the burner tube being used in any position within its range, as indicated by the dotted line. To add to the usefulness of the Burner, we have added the little mouth blowpipe attachment. With this addition fine neat work can be done, and the flame directed into difficult and restricted spaces.

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This stool has a range of 11 inches, the lowest position being 23, the highest 34 inches. The total weight is only 17 lbs. so it can be easily lifted to any desired position. The tilting motion is controlled by a foot lever at the base, which can be worked while sitting on the stool.

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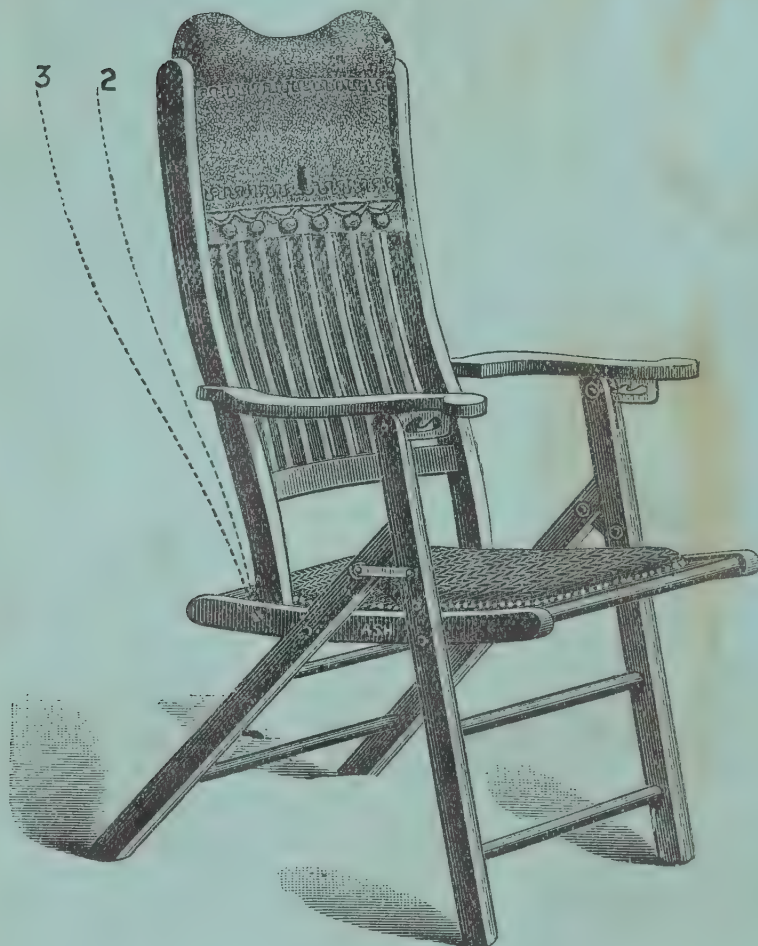
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LIGHT—SIMPLE—STRONG—COMFORTABLE.

Weight, 17 lbs.

Range of Head Rest, $5\frac{3}{4}$ inches.

Price.....\$17 00



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ASH'S

Canadian Monthly Circular

Issued from Toronto on the First of each Month

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NOVEMBER, 1910

No. 2

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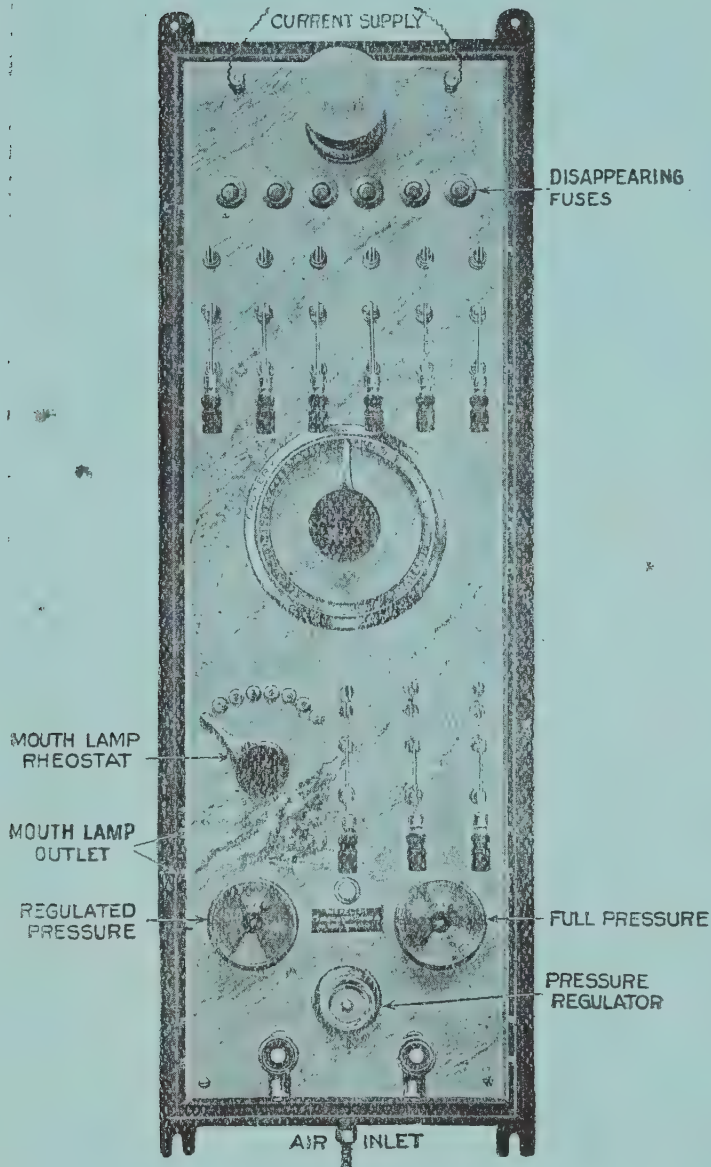
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Ash's Canadian Monthly Circular

VOL. I.

TORONTO, NOVEMBER 1, 1910

NO. 2

A STUDY IN PORCELAIN CEMENTS.

Porcelain, or translucent cements, more correctly known as Silicate Cements, constitute a new filling material, the operative method of which is not more complicated than that of Oxyphosphate Cements, with the exception of the changed technique of cavity preparation and the necessity of the use of rubber dam. The aesthetic value of Silicate Cements, however, is greatly superior, and their lasting properties in the mouth, have so far greatly exceeded the Oxyphosphates.

The steady decline of porcelain fillings has not been due to the appearance and in the main satisfactory results of Silicates, but to the undisputed fact that in the hands of the average operator, they have not been successful. The great difficulty of color matching and shrinkage, the heavy shadow cast by cementation, have all led to the abandonment of porcelain fillings, except by the porcelain specialist.

Silicate Cements of various kinds have appeared and disappeared—Ascher, Brill, Harvardid, Astral, Smaltid, Berylite, Translux and Schoenbeck. Of these, Berylite and Translux have been withdrawn. Of the remainder, Schoenbeck, Astral and Ascher stand prominent as the most satisfactory. These three have excellent qualities, and, according to society reports made by scientific tests, Schoenbeck's stands pre-eminent. It has all the beautiful appearance and edge strength of Astral, with the addition of increased tenacity. The most extreme cases of restorations have been successfully accomplished that would a short time ago have been deemed an impossibility with a Silicate Cement. Many porcelain workers contend that it has quite enough adhesive property to cement porcelain inlays, thereby eliminating the opaque cement line that has heretofore marred the finest porcelain filling.

In the use of Silicate Cements there are different views of the most satisfactory instruments to adopt. Some time ago the employment of bone instruments was thought to be satisfactory. This theory has, however, been disproved by many and extensive tests. Tortoise shell has also been found unsatisfactory for the

same reason, viz., that it is too soft for the great abrasive qualities of Silicate Cement. Latterly the use of Tantalum instruments has been advocated by some manufacturers, but after exhaustive tests we have made, they were found to discolour a large proportion of the mixes made. The only logical conclusion to arrive at is that the Agate instruments are the safest to use with this class of cement—they are quite hard enough for use with so abrasive a material and they do not promote any chemical action. In conclusion, it is safe to say that the advent of the newer Silicate Cements has opened up a new era in Dentistry, and though they will doubtless be improved from time to time, they are now a great boon, not only to the profession, but to the public at large.

F. N.

Dr. William Hunter, one of the most distinguished physicians of London, England, gave an address to the medical section of the Academy of Medicine. Dr. Hunter is the world's great authority on anaemia. He pointed out the important part played by sepsis in the causation of anaemia, both primary and secondary; and of the great complications that such sepsis plays in the progress of many diseases not primarily anaemic. He declared that the physician of the future would have to be as truly septic and antiseptic as the surgeon now is, and in order that anaemia might be successfully treated, **treatment would have to commence at the mouth.**

Dr. Hunter came to Canada to deliver the inaugural lecture at McGill University.

A FEW HINTS.

A Good Coating for Plaster Models.—Mix in 4 ounces of ether, 2 ounces of collodium, and 2 ounces of silver gloss (to be obtained at an art supply shop). Let the mixture stand for 48 hours and shake before use. Keep in a well-stoppered bottle.

An Excellent Separating Preparation.—Take shellac 17 parts, by weight, borax $8\frac{1}{2}$ parts, water 100 parts; dissolve the borax in water, boil it up, and then add shellac.

A great safeguard against checking teeth in soldering is by the use of a perfect double pin perforator. It is most important that the backing should fit the tooth perfectly. This is not often done without the aid of a double pin perforator, which absolutely ensures the holes being made in the backing exactly right for the tooth in hand. By using Young's Adjustable Perforator the vexation of checked facings will be obviated, as well as effecting a distinct saving of time.

The use of salt with an investing material (to aid rapid setting) is found to be dangerous, as it discolours the teeth. A little powdered alum is much better.

INVESTIGATIONS INTO THE PROPERTIES OF SILCATE CEMENTS.

Read before the Annual General Meeting, Birmingham,
May 31, 1909.

By **A. L. Bostock (Kidderminster), L.D.S., Eng.**

In placing before the members the particulars of a very large number of experiments made with recent supplies of the four best-known preparations of "silicate" cements, I do not propose to occupy the valuable time of this, our Annual Meeting, by reading from my paper the various tables of results. Instead of doing this I have had these tables in large type placed on the wall, so that all present can the better follow me in the deduction I suggest from my investigations, which have occupied a very considerable portion of my time during the last six months; and I regret that I have been unable to proceed further than I have done in the time available.

I shall also pass round the actual samples of the cements used in these experiments, so that any member interested may by asking a question elucidate any point that I may not make quite clear.

The properties of silicate cements which concern us in their use as fillings are "strength," or resistance to wear, "adhesion," "alterations" in bulk, colour, or surface, "resistance" to the fluids of the mouth, etc.

I will first refer to the table on "comparative strength," about which it is only necessary to note that "Schoenbeck's" is the strongest, and "Harvardid" the weakest.

	———"Comparative" Strength.——			
	Ascher's.	Astral.	Harvardid.	Schoenbeck's.
Strength in lbs. per sq.	1.031	0.88	0.83	1.17
millimetre. Three tests	1.062	1.19	0.69	1.44
each of bars of 4 to	1.00	1.04	0.95	1.36
4½ mm. sq., ½ in.	1.42	1.08	1.20	1.48
lengths. Averages	1.35	1.43	1.07	1.55
Averages for fifteen tests.	1.17	1.12	0.95	1.40
Equivalent in lbs. for ¼				
in sq. rods.....	49.43	47.32	40.15	59.15

The foregoing results confirm the tests made by Mr. Stanley Read (Brighton).

I will now pass to the question of "adhesion," a property which some writers have declared these cements do not possess to any appreciable extent. My method of testing was as follows:

Natural molar teeth were taken and the crowns ground down level to full exposure of the dentine; the cements were mixed and built up on these teeth with a loop of pianoforte wire embedded in the cement. After two days the hook of a spring-balance was inserted through the loop of wire (the tooth being fixed in a bench vise) and the number of pounds was recorded when the cement broke away from the tooth. The same tooth was used for each different cement.

—“Comparative” Adhesive Power in Lbs.—				
	Ascher's.	Astral.	Harvardid.	Schoenbeck's.
(1).....	3	10	0	18 (a)
(2).....	0	$\frac{1}{2}$	0	22
(3).....	0	0	3	26 (b)
(4).....	$\frac{1}{2}$	—(c)*	14	14 (d)
(5).....	0	8	$1\frac{1}{2}$	26
(6).....	0	0	0	18 (e)
Average	0.58	3.70	3.08	20.66

(a) Would have been more, but wire came out at 18 lb.

(b) Still adherent, as 26 lb. was maximum weight I could apply.

* (c) This might be taken at 14 lb. See note (d).

(d) Tooth broke at 14 lb.

(e) The wire came out at 18 lb.

“Astral” subject to comparison, and note (c) might read 5.40 average.

“Schoenbeck's,” subject to above notes, would read much higher.

The above tests were completed before the publication of Mr. Stanley Read's report in the Journal of March 5, 1909, which confirms the property of adhesion possessed by Astral and Schoenbeck's cements. My tests were made with “dried-up” specimens, to which Mr. Stanley Read states that he found the cements would hardly adhere.

“**Adhesion.**”—The points to notice are the great superiority of Schoenbeck's and the poor result of Ascher's.

Silicates adhere more to dentine than to enamel, and for this reason the practice of covering all dentine in a cavity with osteo under silicate fillings deprives the silicate of some of its adhesive property if the osteo is allowed to set before the silicate is inserted; the osteo also to some extent impairs translucency, as with porcelain inlays, the osteo forming an opaque obstruction to the passage of rays of light.

I have found that the adhesion of Schoenbeck's is of sufficient amount to permit of tooth corners and contours being built up with this cement if carefully made clear of the bite, and when necessary strengthened with a gold or alloy post inserted into the

tooth where a sufficiency of the cement can be built around such a post.

I now draw your attention to the important matter of "shrinkage" in these cements, and I first of all place before you the results of "dry" experiments, i.e., not under "mouth conditions," which, as I shall show you, makes a very great difference in this property.

You will notice that Schoenbeck's is far away in front of the others; the greatest shrinkage shown is with Harvardid, but not much more than with the other two. The greatest amount of this shrinkage "out of the mouth" appears to be due to "loss of the water of crystallization" during the first two or three days, as a study of the table for "loss of weight" shows this to approximate very closely to the shrinkage in each case.

Comparative "Shrinkage" After Mixing "Out of the Mouth."

As it was found misleading to calculate the shrinking per cubic measure, on account of means not being available to measure to the requisite accuracy, and it being practically impossible to make the bars of exactly the same size, the shrinkage in length of each bar in **millimetres** is calculated for each proportionately for every 100 grains in weight.

Six Tests.—Bars made the same thickness as near as possible.

Average.	Ascher's.	Astral.	Harvardid.	Schoenbeck's.
First 2 hours.....	1.23	1.12	1.485	0.30
Next 3 days.....	1.11	1.26	1.575	0.69
Total shrinkage in 3 days from mixing	2.34	2.38	3.06	0.99

Measurements taken to 1/20 millimetre.

Shrinkage continues to take place with each of the above cements for a period varying from one to three weeks; the increase in shrinkage varies from a $\frac{1}{4}$ to $\frac{3}{4}$ per cent. (100 grains). But two months after mixing a further slight increase in shrinkage in nearly all cases could just be detected.

Comparative "Loss of Weight" After Mixing "Out of the Mouth."

Average "Loss" for each 100 grains. Six Tests. Weighed to 1-10 gr.

	Ascher's.	Astral.	Harvardid.	Schoenbeck's.
First 2 hours.....	1.20	0.75	1.31	0.27
Next 3 days.....	1.32	0.95	1.055	0.62
Total loss (grains) in 3 days from mixing....	2.52	1.70	2.365	0.89

This "loss" in weight continues to take place with each of the above cements for a period varying from one to three weeks, the increase in loss of weight being from $\frac{1}{2}$ to $1\frac{1}{2}$ per cent. But two months after mixing a further slight loss of weight could in most case just be detected.

I now draw your attention to the last and most important table, as the results shown here are from an attempt to conduct the experiments as near as possible to "in the mouth" conditions.

You will notice that the cements were kept under water for one week, and the tests continued for a further fortnight with the cements kept dry. Schoenbeck's shows slight "expansion," the others all show shrinkage, which shrinkage is greatly increased if the cements are afterwards kept dry. All absorb water, Schoenbeck's much more so than the others; this absorption of water being greatly reduced if the cements are perfectly protected by varnish during the early period of crystallization. The absorbed moisture is lost if the cements are afterwards kept dry; this, of course, does not take place in the mouth.

It is difficult to account for the first increase in weight in each case unless the coating of varnish fails to be entirely impervious to moisture. That varnishing does prevent absorption of water is proved by the one unvarnished test in each case, as shown by the great increase in weight. This test also shows that shrinkage is governed by loss of weight, as in the unvarnished test no alteration in bulk was detected when the cements were kept in water.

I have recently had my attention drawn to a series of articles published towards the end of last year in the "American Dental Journal," by Dr. Max Kulka, of Teschen, in Bohemia. My results are mainly at variance with his. Dr. Kulka does not appear to have varnished his cements in every case, and where he has done so he removed the varnish in twenty-four hours, which is too short a period for proper protection of silicate cements.

Comparative Variations in "Bulk" and "Weight" Under "Mouth Conditions."

Three bars of each cement (one hour after mixing) were weighed and measured, then thickly coated with varnish and placed in warm water.

Variation in length is stated in millimetres per 100 grains weight.

Variation in weight is stated per 100 grains.

The following shows the variation in length and weight from the original length and weight one hour after mixing the cements.

	Ascher's.		Astral.		Harvardid.		Schoenbeck's.	
	Lgth.	Wt.	Lgth.	Wt.	Lgth.	Wt.	Lgth.	Wt.
Varnish removed								
in 3 days....	—0.55	+0.50	—0.75	+0.60	—0.78	+0.50	+0.29	+2.19
In water, further								
4 days	—0.55	½0.50	—1.06	+1.17	—0.78	+1.05	+0.29	+3.77
Kept dry, further								
4 days	—0.79	—1.15	—1.40	+0.15	—1.00	—0.69	+0.14	+2.15
Further 3 days..	—0.79	—1.50	—1.40	—0.28	—1.14	—1.35	+0.14	+1.68
Further 7 days..	—1.04	—1.50	—1.58	—0.65	—1.34	—1.50	+0.07	+1.07
One test unvarnished—								
In water, 4 days	0.00	+2.80	0.00	+2.19	0.00	+3.05	0.00	+6.77
Kept dry, further								
14 days	—0.20	0.00	—0.27	+0.55	—0.15	0.00	0.00	+1.23

My deductions from this last table are that in the mouth an appreciable amount of shrinkage may take place with the following cements: Harvardid, Astral, and Ascher's; and no shrinkage at all with Schoenbeck's. With the latter cement a question arises as to whether the slight expansion to be detected can produce any "bulging" in fillings of this cement, taking also into consideration its greatest power to absorb water, which can be minimized, however, by perfect protection with varnish during the period of crystallization.

Here I should like to ask whether any member has noticed such bulging in fillings made with Schoenbeck's?

By further investigations into the action of various liquids on these cements, I made the following deductions, taking the average of three tests each: Water and solutions of sodium chloride, sodium carbonate, alum, alcohol, and ether are about equally absorbed by each cement. Astral absorbs the least, Ascher's next, Harvardid somewhat more, and Schoenbeck's again the most absorbent, which is the only fault this preparation possesses. Alum has a great effect upon these cements, producing deep fissures and cracks; the other solutions do not appear to affect the surfaces, excepting the fact that any watery solution coming in contact with these cements in the early stage of crystallization decolorizes the surface, as I have pointed out in a previous paper, and reduces it to a loose light powder. I am convinced that it is detrimental to wash silicate fillings with alcohol, as has been recommended, before coating with wax or varnish.

A mineral acid, such as sulphuric, even a weak solution, has a very destructive action on these cements, especially Ascher's, which mixes much coarser than the others, and probably for this reason is more readily acted upon. Dilute sulphuric acid (B. P.) in two days reduces Ascher's cement 50 per cent. in weight. Astral cement seems to resist such an acid the best.

I suggest the use of this acid (diluted) for cleaning any instruments and mixing slabs on which these cements have been allowed to set hard, but if steel instruments, these must afterwards be cleaned thoroughly and polished bright before using again.

Carbolic tooth powder used where any bleeding of the gums occur will produce, in as short a period as three months, very dark staining of silicate cement fillings. This was recorded from a case where the fillings had remained perfect for eighteen months previous to the use of this powder.

As the exclusion of external moisture during the period of the setting of silicate cements seemed to be of extreme importance, I recorded the effect of "dry heat" during the setting.

I found that with dry heat to 100° F., settling takes place in one-sixth of the usual time; translucency is deteriorated, especially with Ascher's and Harvardid, and much "marbling" of the cement surface takes place, with the exception of Schoenbeck's. I also conclude that dry heat will accentuate any shrinkage.

The **rationale** of this experiment is that "internal" moisture (water of crystallization) is requisite for the best results to be obtained, and that it is as detrimental to success to use dry heat, as it has been shown to permit saliva or external moisture to come into contact with silicates during the period of setting. Exposure to air does not appear to affect the translucency to any extent.

In mixing these cements heat is generated to the amount of two or three degrees; by continued or excessive spatulation more heat is generated, hastening the setting of the cement. In a cool atmosphere crystallization is slow (after careful mixing) during the first few minutes, but any slight increase of temperature hastens the setting, which, when once started, quickly continues. I do not approve of mixing silicate cement to a varying consistency, having a tendency to give variable results. I find that with Schoenbeck's setting sufficiently slowly, it can be mixed always to the same consistency in all seasons of the year.

I will now summarize the various points concerning each cement noticed during my experiments.

"Period of Settling" (Out of the Mouth).—Ascher's requires about fifteen minutes, Harvardid up to twenty minutes, Astral about thirty minutes, and Schoenbeck's about sixty minutes at 60° F. In the mouth setting takes only one-sixth of these times.

The order of plasticity and cohesion I place as follows: Schoenbeck's, Astral, Harvardid, and least in Ascher's.

The properties of "strength," "adhesion," and "absorption" I have sufficiently commented upon.

"Alterations" in bulk, colour, or surface, and "resistance" to mouth fluids, must be considered as to the results after proper protection during the setting period.

"**Bulk.**"—For this I place as follows: Schoenbeck's, Ascher's, Harvardid, Astral.

"**Resistance**" to mouth fluids, though this should be considered jointly with "bulk." Here I place Astral first, with little to choose between the other three.

"**Colour.**"—Generally good, with the exception of the chalky-white spots to be noticed in Ascher's, which even continued spatulation does not get rid of, and I believe is due to the coarseness of the powder.

"**Surface.**"—Marbling is most noticeable in Astral and also slightly in Harvardid. This marbling is most noticed when the cement is dry. Translucency and surface gloss is very good with Astral and Schoenbeck's, but not so good with Ascher's and Harvardid.

Tests made by placing freshly mixed or dried-up specimens of silicate cements in solutions of stains, are, in my opinion, of no practical value as a guide for results in the mouth. I still regard "Schoenbeck's" as all round the best of the silicate cements at present procurable. The new liquid during the last few months supplied with this preparation shows an improvement on the old liquid, and gives a much longer settling period. When a filling made with "Schoenbeck's" is finished, it appears perfection itself in colour (if properly matched) and in translucency, if the natural surface of the cement is not interfered with, and it is impossible with the naked eye to detect its outline or position. If we could keep it as finished by improved means of protection, we should then have a perfectly "ideal filling." At present if I am to be converted from Schoenbeck's it will be by further improvements in Astral cement.

I will now conclude this paper by naming the essentials for success with silicate fillings.

Mixing slab, spatula and instruments (all preferably of agate) to be scrupulously clean and kept for this use exclusively. Tooth matched in shade before applying the rubber-dam, which should always be used.

Mixing the cement should be done as quickly as possible and at first by "stirring" continuously more and more powder into the liquid, then complete the process by spatulating further

powder into the liquid, spreading it over as small a surface of the slab as possible. This should be continued until the previous greasy surface of the cement disappears; it should now be of the consistency of soft butter. Now build the mass of cement up on the edge of the slab and condense the cement with the spatula until the greasy surface reappears. The cement is now in the best condition for insertion in the tooth and will be found very adhesive, also full amount of cohesion is obtainable.

The cement must be quickly inserted into the tooth in small portions, attending especially to any cervical margin, groove or undercut. All excess of cement should be avoided; obtain shape and contour **before** the cement begins to set. This gives natural setting, gloss and translucency. Avoid any friction after the cement has begun to set, as this produces heat, and, I think, causes loss of water of crystallization, which spoils the translucency of the cement. Patting the surface of the cement with agate points smeared with vaseline brings out the best results in gloss and translucency. If a matrix is necessary, use coloured celluloid strip smeared with vaseline. Avoid alcohol, moisture and dry heat, also disking, etc. When the cement has set sufficiently apply at least two coats of thin varnish (three or four coats is safer), giving each ample time to dry and harden. I do not care for the use of wax for several reasons, the requisite heat being objectionable.

I leave to mention last the care necessary to take with the liquid supplied with silicate cements. Avoid any contamination of the liquid, and as this deteriorates we should only obtain small supplies at a time. Personally, I do not believe in using up the last half of the liquid; I discard this and open up a fresh bottle. Before use always stir up the contents of the bottle. I think that whatever improvements may be made in these silicate cements will be in the compounding of the liquid, of which the manufacturers keep placing new preparations before us, and we are in the hands of the manufacturers to a large extent.

We have not yet obtained possession of a plastic filling which is in all respects perfect, and if by pointing out the good as well as the bad features of the preparations that we use, we can encourage the manufacturers to further improve them, we may eventually have placed in our hands a filling material to our entire satisfaction.

DISCUSSION.

Mr. Walter Coffin (London) asked whether Mr. Bostock meant that the setting period, in the mouth, of Schoenbeck's cement was about ten minutes?

But dental prosthesis has also undergone a revolution in regard to the construction of plates which in its results now leaves far behind the ancient methods. By casting under pressure we are able to obtain a plate which possesses absolute perfection of fit, such as we have never yet been able to achieve.

Moreover, we can make a plate of any thickness, without interfering in any way with the reproduction of the finest details. Equally, it is possible to employ platinized gold—a gold which offers exceptional resistance, and is almost impossible to strike-up. The results are always perfect.

With special precautions, we can cast directly upon porcelain.

Further, the cast plate will not change in form, like a struck-up plate, under the influence of heat; as, for example, when we are obliged to solder on bands.

The applications of this process are only limited by the limitations in skill of the operator. We are still in the infancy of this new branch of our art, but the daily employment of this method, and the results obtained therefrom, give it such a value that it will from henceforth be difficult to dispense with it in the exercise of our profession.



Messrs. Claudius Ash, Sons & Co. (the oldest dental manufacturing company in the world) opened their fine new premises, Nos. 11-13 Grenville Street, Toronto, on Sept. 6th, 7th and 8th, with a Depot Clinic that was well attended. Dr. A. McAlpine, of Bradford, Pa., the Schoenbeck cement expert, delighted the many callers with his specimens of actual work done in the mouth as well as the work done at the clinic on various patients that were presented to him. Representatives of other manufacturing companies were on hand to demonstrate lines of more than passing interest to the profession. Messrs. Ash & Sons' new quarters are the finest in Canada, both in point of appearance and in arrangement, and their facilities for executing orders are unequalled. The basement, ground and first flats are occupied by them and give ample accommodation for the very large and varied stock that is carried. One of the most interesting features of the warehouse is a beautiful model operating room equipped with the most up-to-date furnishings. The staff has been greatly increased to insure the most careful handling of business.

PERSONALS

Dr. Wallace Seccombe, who has been practicing for many years in Carlton St., Toronto, has taken Dr. T. B. Carmichael ('09) into partnership. The firm will be known as Seccombe and Carmichael.

Dr. G. D. Smith has removed from Oil Springs to Port Dover, Ont.

Dr. G. L. Palmer has resumed the practice of dentistry at the corner of Bloor St. and Spadina Rd., Toronto.

Dr. Frank Pollock ('08) has sold his practice in Listowel to Dr. G. E. Long. Dr. Pollock intends to reside in the Golden West.

Dr. Sangster Lederman ('10) has started practice in Berlin, Ont.

Dr. J. S. Brooks has removed from Little Current to West Toronto.

Dr. E. Lane Kenny has removed from Brockville to Bathurst St., Toronto.

Dr. R. W. Frank ('09), the all-round athlete, accompanied the Queen's Own Rifles on their trip to England.

Dr. W. A. Scott, of Toronto, returned from a trip to the West.

Statistics from Russia show that during the past few years 75 per cent. of the dental students enrolled at the colleges are females.

Ash & Sons are offering a new and improved form of roughened Crown Pin in base metal, to fit either an Ash or Davis Crown.

Dr. Sydney Wollatt, who has been in Montreal for the past year, has opened an office at No. 3 College St., Toronto.

It is pleasing to note that the daily papers are taking up the question of proper care of the teeth of children in our schools. Push along the good work, the dentistry of to-day is preventative dentistry.

Dr. H. M. Little is opening an office on Parliament St., Toronto.

An excellent method of bleaching ping rubber is to run it through C. P. Sulphuric Acid, and then immediately place it in cold running water.

Mr. Bostock said he calculated ten minutes to be more than ample time in the mouth.

Mr. Coffin asked whether Mr. Bostock's definition of "mouth conditions" as to solutions had been previously published?

Mr. Bostock said they had not.

Mr. Coffin asked what was then the exact solution, the temperature, and also whether any agitation or slight friction was used to imitate "mouth conditions"?

Mr. Bostock said he mixed samples of each of the cements and these were placed in a bottle of warm water kept at not quite the temperature of the mouth, the bottle being frequently shaken. In each case that was done three times, and he took it as being quite a sufficient test for the purpose.

Mr. Coffin asked whether Mr. Bostock seriously meant that being varnished for three days in a solution was comparable with the fate of varnish in the mouth?

Mr. Bostock said the point aimed at was to protect the cements for at least two days, and that, he thought, was the secret of success. He was afraid it was not possible in the greater number of cases to reproduce the same conditions in the mouth, but he thought if the filling was well varnished three times, or even four, and the patient asked to abstain from using a brush, the varnish was likely to remain there for a couple of days.

Mr. Coffin asked whether suitably shaped points of the ordinary orange wood sticks were not satisfactory as substitutes for metallic instruments?

Mr. Bostock said he used nothing but agate. Schoenbeck's cement clung so much to ivory and tortoiseshell that agate was the only thing that could be used with satisfaction.

Mr. Sherwood (Oxford) agreed that the agate point was best.

Mr. Grayston (Scarborough) said that in a previous paper Mr. Bostock had stated that Schoenbeck's cement was an extraordinarily quick-setting cement. He had purchased a small bottle and found it was the slowest setting cement he had ever used, and therefore he wanted to know whether any change had been made or whether batches of cement varied.

Mr. H. Baldwin (London) said that in mixing the cement on a porcelain slab an agate spatula with sharp edges was preferable to an ivory one, scraping up the mixed portion very much better. Chlorapercha was a much better varnish than any of those supplied. With regard to Schoenbeck's cement, in the winter when the weather was cold it seemed to set slowly enough, but a slight rise of temperature made a tremendous difference in the rapidity of its setting; it set so quickly in the summer that he could not use it.

Mr. Bostock, in reply, said in the paper he published two years ago he alluded to the quick setting of Schoenbeck's cement, and found it continued so up to about nine months ago, but since then it had been apparently altered, and it was now undoubtedly the slowest setting. On testing he found that the new liquid was three times more adhesive than the old, that there was less shrinkage, and that in every way it was superior. It gave more time for working the cement. He had not found the difference of setting between winter and summer that Mr. Baldwin had referred to. During the spell of warm weather recently he had had ample time for using it and found no difficulty with it in the winter. The difficulty mentioned might be due to the liquid not being sufficiently fresh. It was almost best to discard the lower half of the bottle and use fresh liquid.

**Below can be seen a few extracts from "Clinical Notes on
Silicate Fillings."**

By LEWIS OSBORN, L.D.S., Eng.

**Read before Liverpool District Odontological Society, Nov. 15th,
1909.**

Mr. L. Osborn:—"I have used Silicate Cements for four years, and tried three makers, Harvardid, Ascher's and Schoenbeck's. In my hands the latter has proved by far the best in all respects."

Mr. Matthews:—"They were using all the three Cements Mr. Osborn mentioned, and he agreed with Mr. Osborn that they had the best results with Schoenbeck's."

Mr. J. W. Lloyd:—"He himself after experimenting with Ascher's, described it. More recently he tried Schoenbeck's, and with this he had better results. He had found Schoenbeck's very good in the repairing of Bridges or where a porcelain front has been broken off."

Mr. Frank Harrison:—"Have used most of the Silicate Cements now on the market, but he had discarded them in agreement with the other speakers for Schoenbeck's. He thought its adhesiveness was a considerable advantage. He had tested some with Methylene Blue, and every one except Schoenbeck's proved porous."

Mr. J. A. Woods:—"He had only had experience of Schoenbeck's, and from Laboratory tests, and from Clinical experience it seemed to be by far the best on the market."

From "The Dental Record," January, 1910.



ASH'S INLAY AND CROWN CEMENT GREATLY IMPROVED

(Oxyphosphate of Zinc)

Features—Extra Tenacious; Extremely Dense; Very Durable; Non-Expanding; Highly Resistant to the Fluids of the Mouth.

One of the wants experienced by the Inlay and Crown worker is a reliable and enduring cement, which can be depended upon to retain Inlays and Crowns in position for an indefinite time.

Ash's Inlay and Crown Cement meets the need, and possesses all the features enumerated above. The powder is very finely ground, it is easily mixed with the liquid, and forms a cement which practically does not expand during crystallisation. It is thus free from an objection which is present in most oxyphosphate cements that are used for setting Inlays and Crowns, viz., expanding during crystallisation, with the result that the bite is raised in the case of a Crown and the fit is disturbed in the case of an Inlay

Directions for Use.

Put a small quantity of the Liquid on a clean glass slab, place enough Powder near it, but not in it, mix the two together by drawing a little Powder at a time into the Liquid with a spatula, until it is of the consistency of milk. In this condition it is suitable for setting an Inlay. (The Inlay should be smeared with a camel-hair pencil dipped in the Cement, and then the cavity should also be smeared so as to obtain the junction of cement with cement). For setting Crowns, the Cement should be mixed to the consistency of putty.

Supplied in the following shades:—

White, Pale Yellow, Yellow, Pearl Grey.

One-shade packet, any shade....per packet \$1.25 6 pks. for \$ 6.00

Four-shade packet.....per packet 3.00 6 pks. for 15.00

SECOND-HAND GOODS

- | | |
|--|-------|
| 1 Ritter All Cord Engine, Wall type. 110 volts. Direct current. Complete with Register Wrist Joint. Nearly new, in perfect order | 70.00 |
| 1 Ritter Cable Engine for 110 volts. Direct Current..... | 40.00 |
| 1 Triumph Dental Lathe. 110 volts. Direct Current..... | 10.00 |
| 1 Ritter Overhead Cable Type Engine. 110 volts. Direct Current. Excellent condition, just been completely overhauled by the manufacturer | 65.00 |
| 1 Betz Electric Engine, Overhead All Cord Type, 110 volts, 60 cycle alternating current, in good condition..... | 40.00 |
| 1 Columbia Chair, Maroon Plush, in perfect condition, new upholstery | 80.00 |

If you are thinking of new equipment for your operating room, a visit to our model surgery on the first floor of our new building is well worth a visit. We keep in stock a fine selection of most modern operating room furniture, including white steel enamelled goods. We can show you any combination of goods set in this most attractive of operating rooms, giving you a most perfect vision of whatever class of equipment you may fancy. The installation of the model operating room is a new departure in Canada, and ours is the only one to be seen. It has already proven not only supremely attractive, but profitable. A visit to it will CONVINCE you.

The columns of this magazine are open to the profession for announcements regarding the sale or purchase of practices. The details of these transactions we will handle confidentially.

Consequent to a demand from many dentists who want a complete line of Buckley's preparations, we beg to announce to the Dental profession that we have installed a complete range of these celebrated products.

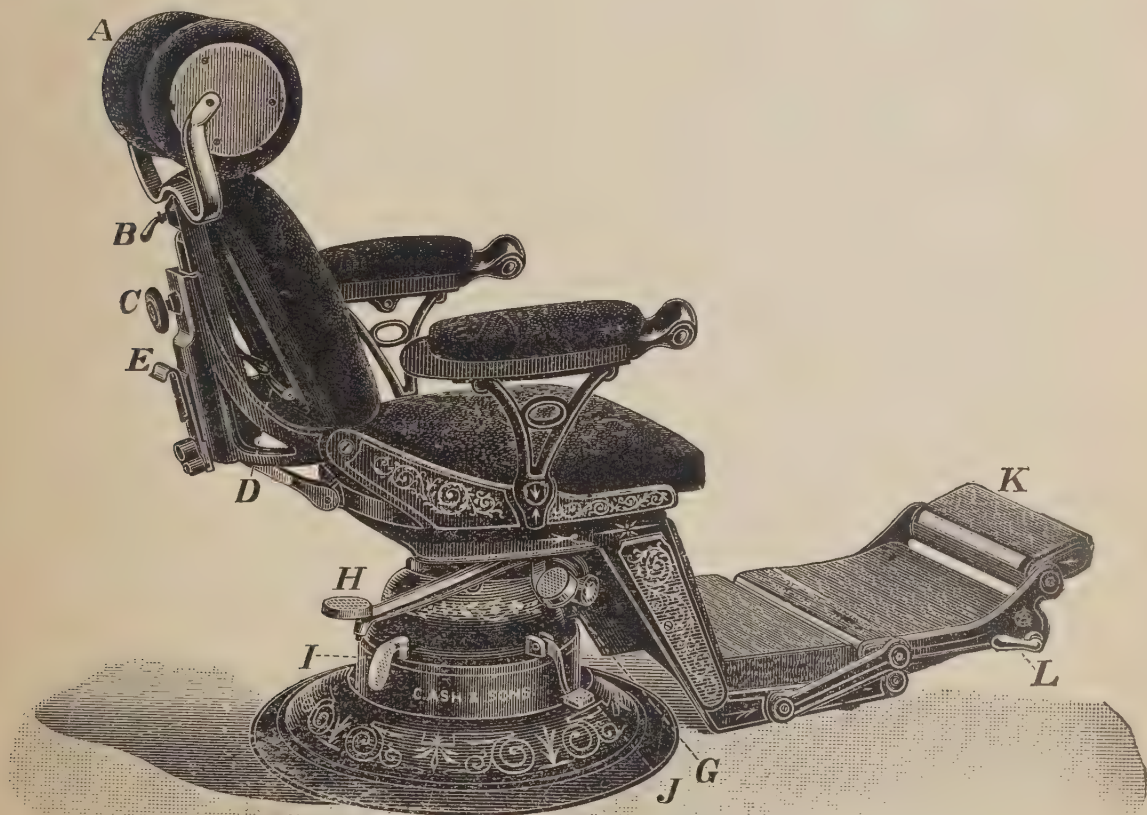
Is it wise to get your preparations (on which so much depends), made up in an indifferent manner by the local chemist, when you can get Buckley's own preparations by writing to us?

ASH'S LONG RANGE CHAIR—Fig. 2

“I wouldn't trade my chair for half a dozen of any other kind—it's sure THE chair.”

This is a gratifying voluntary recommendation sent us by an Ontario dentist of years of experience. He recently purchased one of our Long Range Chairs, with the celebrated Roll Head Rest, and speaks of it as above.

We have plenty more just as enthusiastic reports of the chair from various parts of the Dominion. This chair is designed to do a great deal of the work that the dentists generally asks his back to do. Consider its range, foot rest accommodation, appearance, quality, and, lastly, price! Save yourself labor and discomfort. Write us for further particulars and large illustrations showing movements.



(For prices see next page.)

Prices of Ash's Long Range Chair—Fig. 2

Range, 19 inches.

Highest Position of Seat, 35 inches.

Lowest Position of Seat, 16 inches.

With Leather Uphostery, Wilkerson H. R., Lino Foot Board	\$194 00
Do., with Roll Head Rest	188 00
With Plush Upholstery, Wilkerson Head Rest	191 00
Do., with Roll Head Rest	185 00

For White Enamelled Finish add \$17.00 per chair.

Cash Discounts Given from Above.

For those who desire a lower priced chair than our Long Range, we would recommend our Britannia Chair.

Leather Upholstery, Roll Head Rest, Lino. Foot Board...\$145 00

For White Enamelled Finish add \$12.00.

WE INVITE SPECIAL DEPOSIT ACCOUNTS.

A cash deposit of \$100.00 to apply to general merchandise, entitles the sender to a discount of \$11.11.

A cash deposit of \$50.00 entitles the sender to a discount of \$2.50.

A cash deposit of \$25.00 entitles the sender to a discount of \$1.25.

Why not send us a deposit NOW.

TWO GOOD LINES

At Popular Prices Never Before Equalled.

Cone Socket Mouth Mirrors



Plain or Magnifying, any size, each 25 cents.

We also carry in stock a large line of fine Glasses in Smooth Metal Handles, Plain or Magnifying, selling at 25 cents each.

Send us a mail order for some of these to-day. It does not pay you to use that mirror that has been defaced through contact with a stone.

PRACTICE in Toronto City for Sale—Choice location, prominent corner, high-class practice. Apply Ash & Sons, Box 369.

MECHANICAL ASSISTANT wanted, Western Ontario city. Apply Ash & Sons, Box 369.

Ash's Dowel Crowns

The following five pages, which show some of our moulds of Ash's Detached Post Crowns are well worth close examination and study. The illustrations will be valuable as a reference and guide in ordering by mail. Keep these illustrations in a convenient place, as, of course, you will become a user of them when you are conversant with their superiority over any of the existing dowel crowns.

The price, too, is a great consideration—make a note of it—

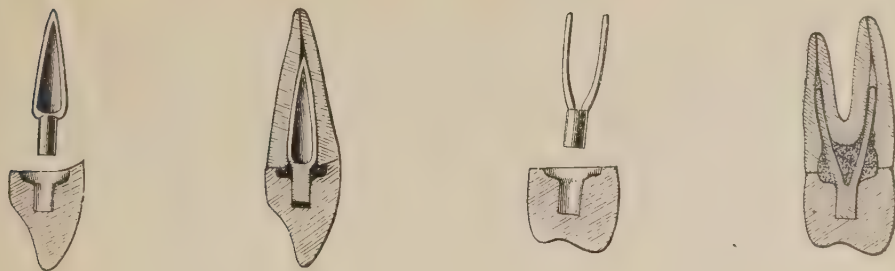
12 cents each.

\$10.00 per hundred.

Outside of the recognized value they have, as being made of our celebrated mineral, positively the only body that can be **successfully** polished after grinding, the moulds are the most serviceable. Notice in the Anterior and Bicuspide teeth, the provision for roots that are large bucco-lingually.

Note also the recess in the crown that takes the posts. It is etched in each and every crown, assuring you of perfect cementation. We are also making now the labial aspect of our crowns much longer than shown in the illustrations. This improvement is obvious.

ASH'S DOWEL CROWNS



The principal advantages of a detachable crown, as contrasted with a crown having a pin fixed in the mineral, lie in the facilities afforded for grinding the base of the crown to fit the root and for bending the dowel to the angle required to obtain a correct bite.

In Ash's Dowel Crowns the measurements and shapes of the bases are such as to fit the greatest number of average roots.

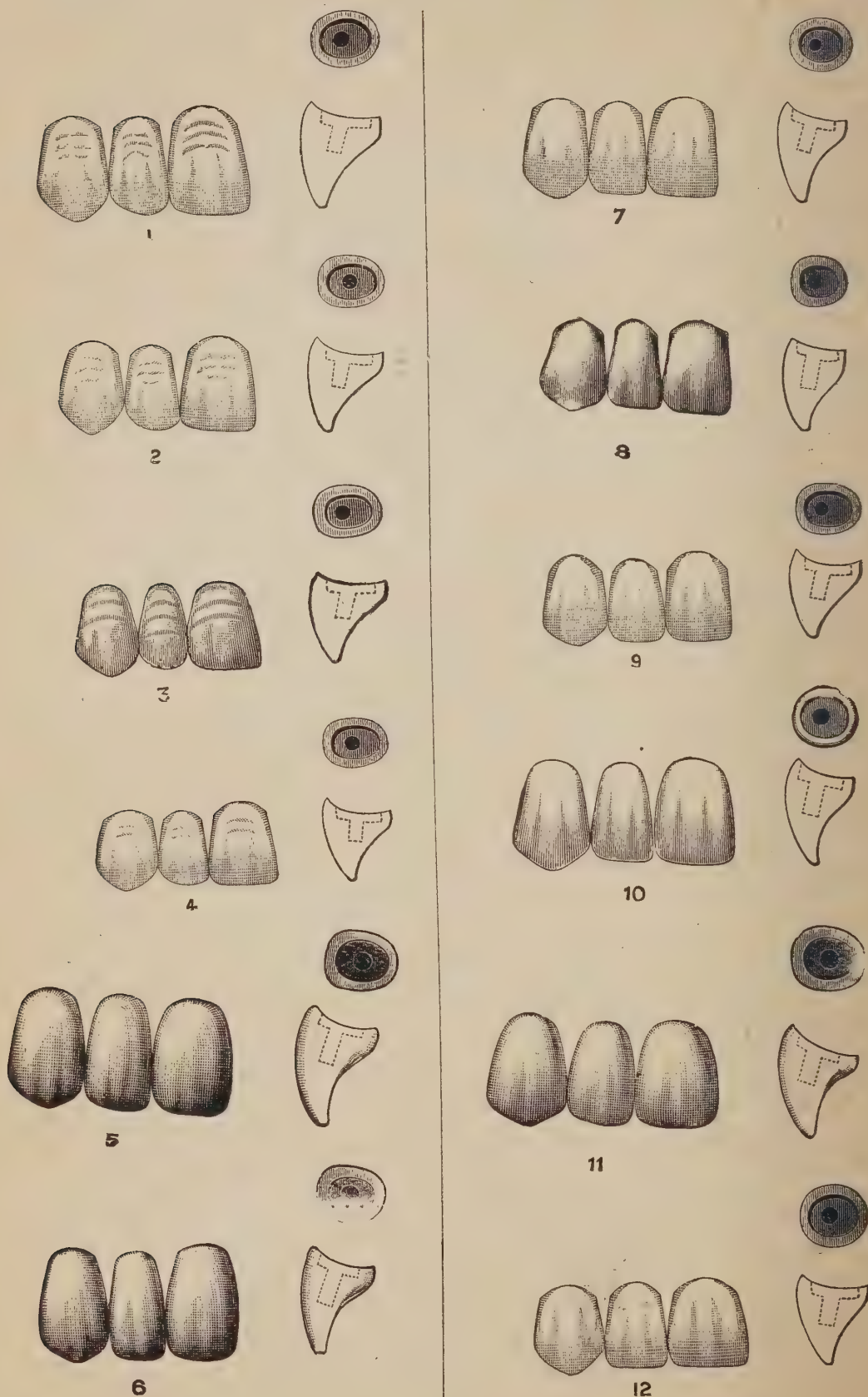
The dowels are made of the best quality Dental Alloy, and are much more rigid than Platinum; they are strongest at the part which has to bear the greatest strain, viz., where the crown joins the root. Those intended for bifurcated roots of Bicuspid are extremely strong; at the same time the pin ends are sufficiently pliable and thin to allow them to follow the bends of root-canals. We need hardly emphasize the serious objection that exists to the insertion of a base metal pin in a natural root.

Made in sets of six—Centrals, Laterals, and Canines in thirty sizes and patterns, Bicuspid in fifteen sizes, and Molars in fourteen sizes; other sizes in preparation.

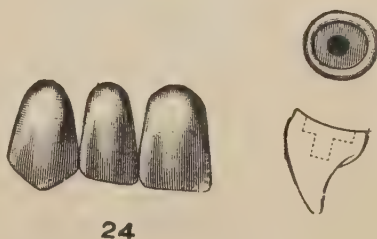
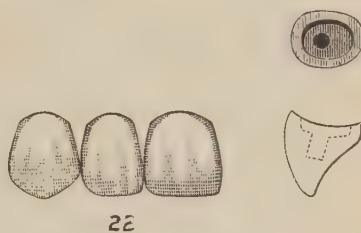
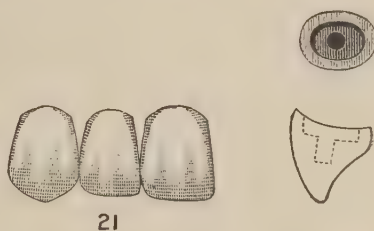
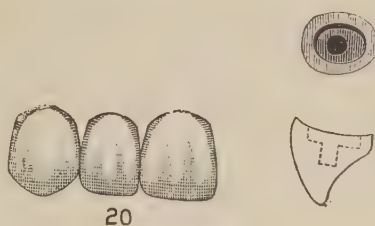
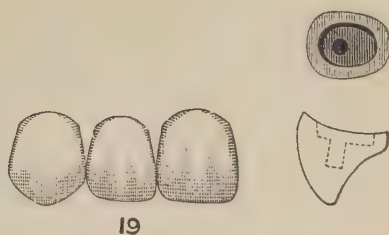
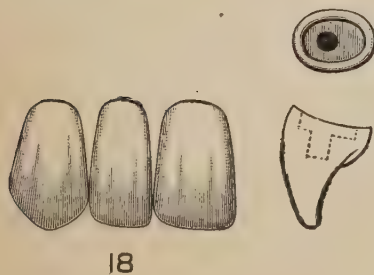
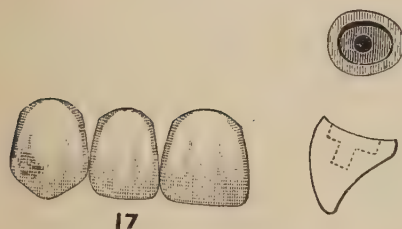
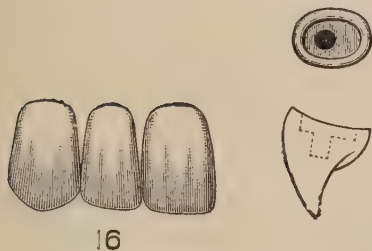
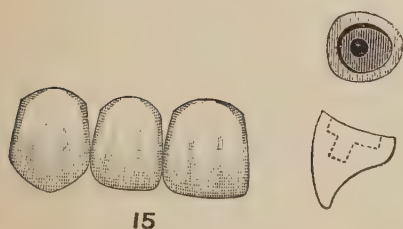
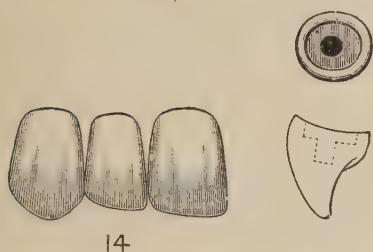
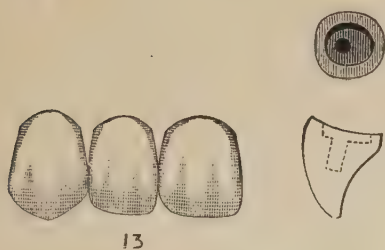
Each.	12c
100 Crowns.	10c
500 Crowns.	9½c
100 Crowns.	9c
Single Pins, in two sizes, in Dental Alloy..each	25c
Bifurcated Pins, in Dental Alloy.....each	35c

Base Metal Pins, of new and improved form, made of stiff white metal, roughened all over, each, 5c.

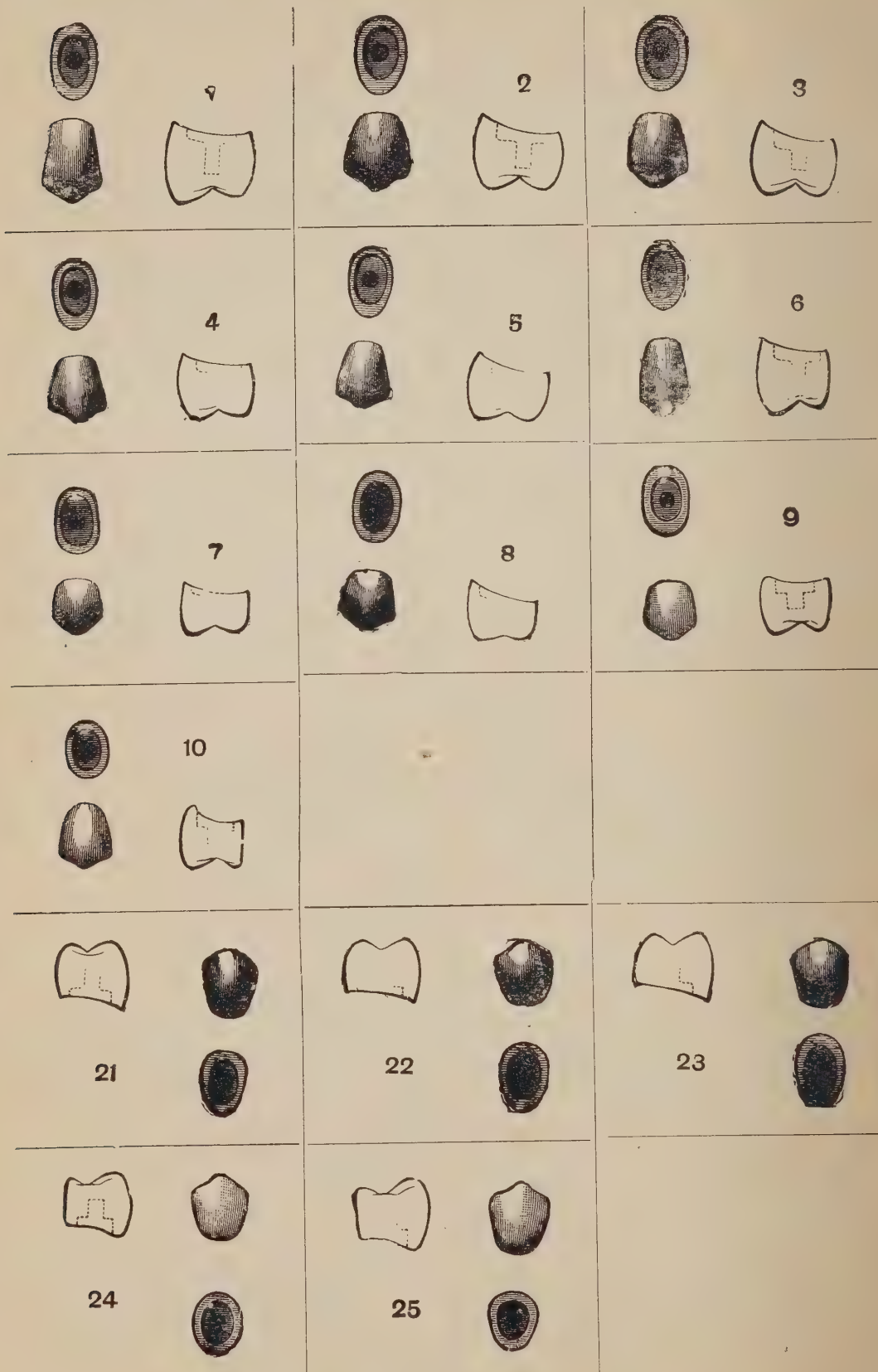
ASH'S DOWEL CROWNS—UPPERS



ASH'S DOWEL CROWNS—UPPERS



ASH'S DOWEL CROWNS—BICUPSIDS



ASH'S DOWEL CROWNS—LOWERS



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MOLARS



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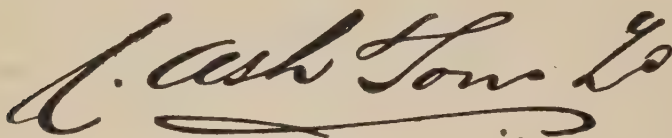


Ash's Dental Rubbers

Unapproached for

**Excellency, Purity, Strength, Elasticity
and Density.**

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



in addition to the name of the Rubber.

Always ask for **Ash's** when ordering Dental Rubbers.

For full list of our Dental Rubbers showing **new** and **reduced** prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we give full **16 ounces** of Rubber **to the pound**, exclusive of the linen backing. We have also stated that **most** American manufacturers do **not** give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?

Ash's Dental Rubbers

Consequent to the easing of the market on Pure Para, we are pleased to be able to announce the following reduced scale of prices on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.50	\$5.00	\$4.75
No. IX Pink, Medium.....				
No. 1 Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....	5.00	4.50	4.25	4.00
No. 2X Pink, Medium.....				
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

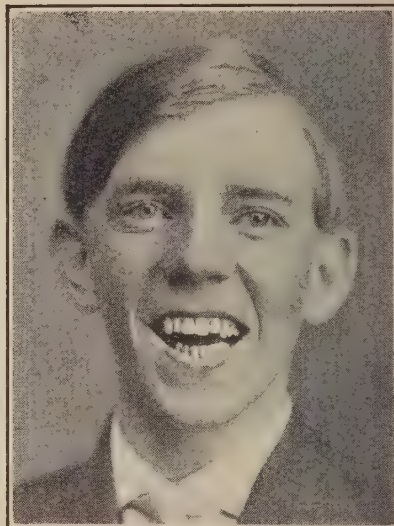
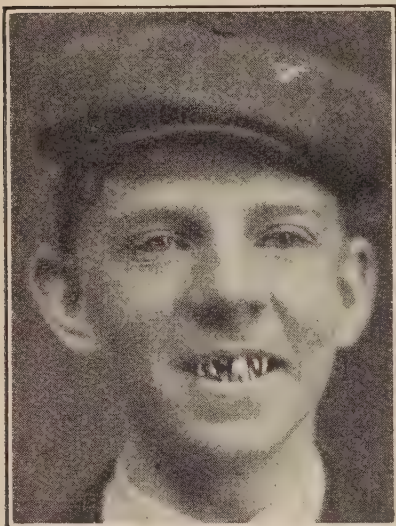
S. P. Deep Pink.....	\$4.50	\$4.05	\$3.95	\$3.95
White, for Side Blocks, etc., Bone...				
Child's G., Bright Red.....				
A. E. Elastic, Dark Brown.....				
W. Elastic, Dark Brown.....	4.00	3.60	3.35	3.10
Whalebone No. 1, Dark Brown.....				
Whalebone No. 2, Light Brown.....				
Solid Base, Pink Brown.....				
Dark Red.....	3.00	2.75	2.55	2.45
Flexible Base, Light Brown.....				
Dark Elastic, Light Horn.....				
Red.....				
Orange.....	3.00	2.75	2.55	2.45
Black, Dark Horn.....				
Dark Brown.....				
Brown.....				
Improved Black, Jet Black.....	3.00	2.75	2.55	2.45
English Base, Medium Brown.....				
Combination.....				
Maroon....				

SPECIAL—FOR TENDER GUMS, ETC.

	Degrees Fahrenheit	H.	Time M.	
Soft Pink, for lining Palates.....	310	1	15	\$6.00
Soft Dark Red.....	310	1	15	4.00
Vela. for making Artificial Palates...	270	6	0	6.00
Brown Weighted.....				4.75
Pink Weighted.....				6.00
Brown Repairing.....				4.75
Pink Repairing.....				6.00

Cash discounts do not apply on quantity rates over 5-lb. lots; in other words, from 10-lb. to 20-lb. lots are cash prices.

**Reproduction of Restorations made by DR. A. McALPIN
Bradford, Pa. with "SCHOENBECK CEMENT."**



Schoenbeck Silicate Cement

**The Nearest Approach to Nature's Enamel
Known to Dental Science**

The illustrations on the next pages showing work done by Dr. McAlpin, together with Society reports, criticisms, test reports, instruction and other general information regarding "**Schoenbeck's Cement**" are of surpassing interest to the Dental Profession.

This Cement has gained and maintains the foremost position of all Cement fillings.

SUPPLIED IN THE FOLLOWING SHADES

No. 1	Whitish	No. 8	Greenish Grey
2	White Yellow	9	Bluish White
3	Light Yellow	10	Brownish
4	Yellow	11	Pink Light
5	Dark Yellow	12	Pink Medium
6	Light Pearl Grey	13	Yellowish Grey
7	Pearl Grey	14	Brownish Grey
	15		Slate Bluish

PRICES

1 Color, Small	\$1.50	1 Color, Large	\$3.00
4 Color Packet	5.00	6 Color, Packet	7.50
1 Small Powder	1.00	1 Small Liquid	.50
1 Large Powder	2.00	1 Large Liquid	1.00

Pure Cocoa Butter.....Per Tube .20

Schoenbeck's Special Varnish.....Per Bottle .35

TESTIMONIALS

From the hundreds of unsolicited testimonials received from the dental profession by the manufacturers from all parts of the world only the following are selected.

Dr. A. Mc. Alpin, Bradford, Pa., to Messrs. Claudius Ash, Sons & Co., Ltd., New York, July 11th, 1909. Regarding my experience with Schoenbeck's Silicate Cement: I have used it now for a year and very extensively. It possesses translucency and natural tooth appearance that no other that I have used does. Some fillings inserted a year ago show no evidence of shrinkage or disintegration, and one case where I persisted in efforts to put in fillings that would not discolor, using another silicate cement, Schoenbeck's after some six months shows no signs of discoloration. The texture is fine, it becomes very hard and I consider it an almost indispensable material for approximal cavities in incisors especially. Used in connection with gold screws it has a wonderful range of usefulness in restoration work. It is a very close competitor of porcelain in every way and a great deal better in one way in that the joint in porcelain inlays is eliminated entirely.

Yours truly,

Dr. A. Mc. Alpin.

At a recent meeting of the Liverpool Dental Society different prominent members endorsed Schoenbeck's Cement, stating that after using the various other Silicate Cements they had proved conclusively that Schoenbeck's was far the best.

Mr. A. L. Bostock, L.D.S.E., Kidderminster, England, in his paper read before the British Dental Association at the annual meeting, May 31st, 1909, "Investigations into the properties of Silicate Cements," draws the following deductions:—

Adhesion:—The point to notice is the great superiority of Schoenbeck's and the poor results of others.

Shrinkage—in the mouth:—My deductions from this last table are that in the mouth an appreciable amount of shrinkage may take place with most cements, and no shrinkage at all with Schoenbeck's.

Plasticity and Cohesion:—I place as follows: Schoenbeck's before all others.

Translucency and Surface:—Very good with Astral and Schoenbeck's, but not so good with others.

Directions for Schoenbeck's Cement

MIXING.

The following directions for mixing must be implicitly followed to insure perfect results:

Draw a small quantity of powder into the liquid and spatulate thoroughly, add further powder in increasing quantity until the mix assumes the consistency of thick butter. Spatulation should be thorough and not exceed sixty seconds, so that the warmth produced by the reaction of the powder and liquid coming together in crystallization occur in the cavity and not on the slab. A prolonged spatulation causes this warmth to waste and also disturbs the setting qualities of the Cement, which, if properly mixed, will harden within from five to ten minutes in the cavity, while outside on the slab it sets more slowly; this is caused through the temperature of the cavity being considerably higher than that of the slab. To demonstrate this take half of the mix from the slab, roll it into a ball and hold in the closed palm of the hand (which is practically the same temperature condition which prevails in the cavity) when it will be found to harden within a few minutes whilst the other portion left on the slab will remain plastic a much longer time.

FILLING.

The cavity must be carefully prepared and absolutely dry and after inserting the cement every precaution must be taken to prevent the saliva from touching the filling until it is varnished. Three or four coatings of Schoenbeck's Varnish should be applied, the time occupied by each coating of varnish to harden is about ten seconds. Agate instruments are the best to use from start to finish, although ivory can be used if these are not to hand. All metal instruments must be avoided. In this connection a well known practitioner who has had a wide experience with this cement writes as follows: Convey the cement

quickly into the cavity in the usual manner, being careful to attend to any cervical margin, groove or undercut. All excess of cement should be avoided; obtain shape and contour before the cement begins to set. This gives natural setting, gloss and translucency. Avoid any friction after the cement has begun to set, as this produces heat, which spoils the translucency of the cement. Patting the surface of the cement with agate points smeared with cocoa butter brings out the best results in gloss and translucency. If a matrix is necessary use colored celluloid strips smeared in the same way. Avoid moisture and dry heat also disking. When the cement has set sufficiently apply at least three or four coats of thin varnish giving each time to dry and harden.

NOTES.

Use a clean glass or agate slab.

See that your Agate instruments and points are clean.

Keep your powder and liquid well stoppered.

Keep both powder and liquid in ordinary room temperature and in the boxes.

Pure cocoa butter is the best lubricant to use on your-instruments, although the cement can be used if necessary without it.

This cement differs from all other silicates in its great adhesive properties.

Contours, crowns and restorations can be made with it.

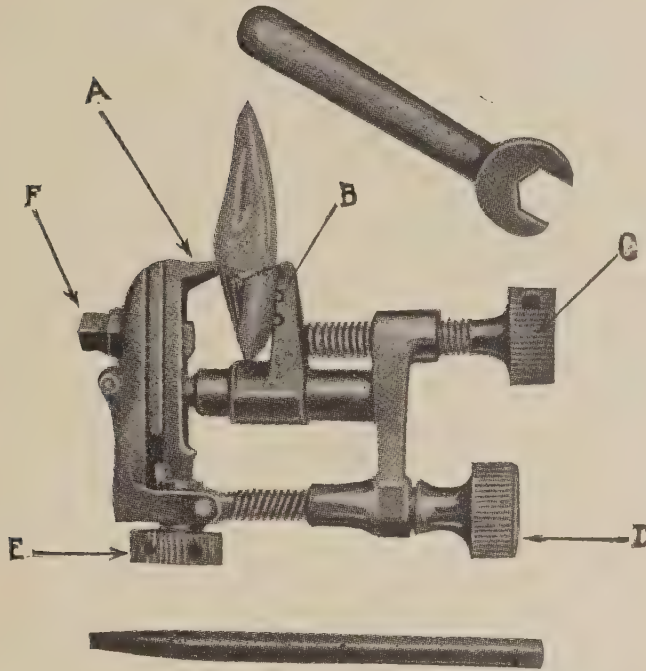
In easy mixing qualities, natural appearance, translucency, adhesiveness, strength and nearness to tooth texture this cement is unequalled by any so far produced.

To Porcelain Inlay Workers, Schoenbeck's Cement is invaluable. It allows the setting of the Inlay, without the noticeable Cement line.

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An ideal appliance for removing crowns from roots.

REGISTERED



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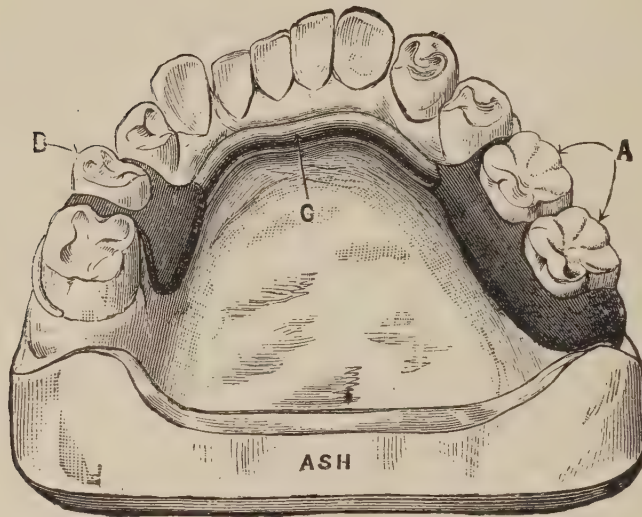
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Complete directions with each Remover.

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No tendency to push teeth outwards.

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Per dwt. \$.40



Sanodent

(Registered)

A Superior Root Dressing

FROM THE FORMULA OF
MR. C. R. FITCH, L.D.S., Eng.

Sanodent has been regularly used and well tested for nearly four years with the most satisfactory results, hence it is offered to the Profession as a thoroughly reliable preparation

DIRECTIONS FOR USE.

AS A DRESSING FOR SEPTIC OR ABSCESSSED TEETH.—Thoroughly clean out the contents of the Pulp Chamber and Root Canals in the usual manner. Mix the Sanodent Powder and Liquid to the consistency of thick cream and apply on Cotton Wool to the Root Canals and Pulp Chamber. Repeat these dressings until the tooth is perfectly "sweet." Then permanently fill the Canals with either Asbestos Fibre, Gutta Percha Points, or Cotton-Wool covered with Sanodent mixed to a fairly thick paste.

In very septic teeth, which at the time of treatment are not abscessed, it is advisable at the first to clear out the contents of the Pulp Chamber only, apply a dressing of Sanodent, and leave the treatment of the Canals until a subsequent visit, when their contents will be far less septic.

SOME OTHER USES.—In those cases in which for some reason or other (*e.g.*, Tortuous Canals), it is impossible to clear out the Canals thoroughly, cover the orifices of these Canals with Sanodent mixed to a paste, and carried to place on Asbestos Fibre or Cotton-Wool. Any remaining Pulp will be preserved in an antiseptic condition.

As a "Mummifying" agent, those who practise "Mummification of the Pulp" will find Sanodent excellent. Subsequent to devitalising and removing the coronal portion of the Pulp, apply Sanodent, mixed to a paste, on either Asbestos Fibre or Cotton-Wool.

After the application of Arsenic, a dressing of Sanodent left on for a day, prior to attempting the removal of the Pulp, will render the Pulp tough and thus admit of its being much more easily removed whole from the Canals.

Sanodent is very useful as a permanent Root-Canal Filling when it is mixed to a paste and used in conjunction with Asbestos Fibre, Gutta-Percha Points, or Cotton-Wool.

N.B.—Do not force Sanodent through Apical Foramina, and do not seal it in contact with living tissue, either pulp or gum. Sanodent is not intended to replace proper Root Treatment, but to aid it.

Sanodent is supplied in stoppered bottles. The bottles should be kept well closed when they are not in use. After exposure to light and air the liquid becomes somewhat darker in colour than as supplied, but this is no detriment to it, and in no way affects its efficacy.

Sanodent Powder and Liquid in Packets, per packet..... \$1 25

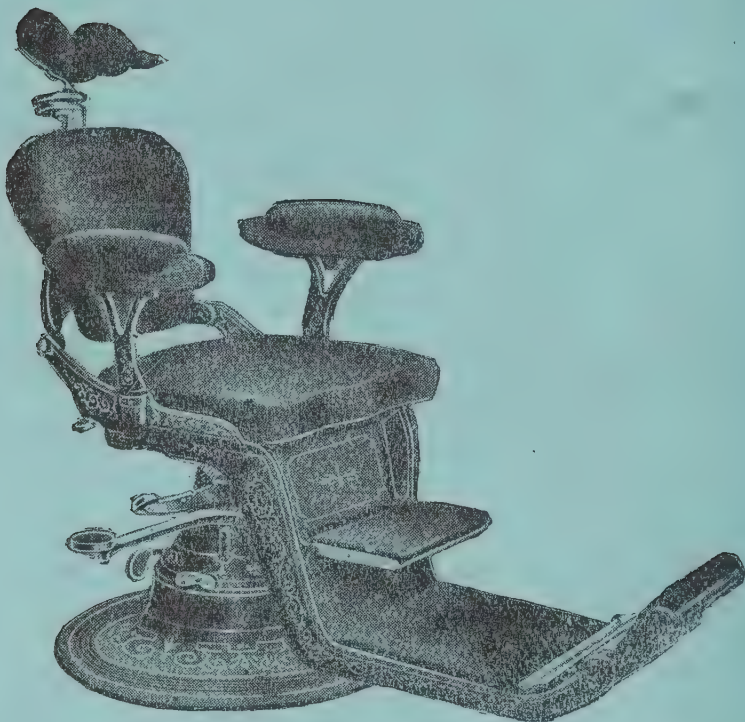
NOTE.—We have a limited number of free samples of *Sanodent* left. Applications for these will be filled in strict order so long as the supply holds out.

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Range, 13 inches.

Highest position of Seat, 31 inches.

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ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

DECEMBER, 1910

No. 3

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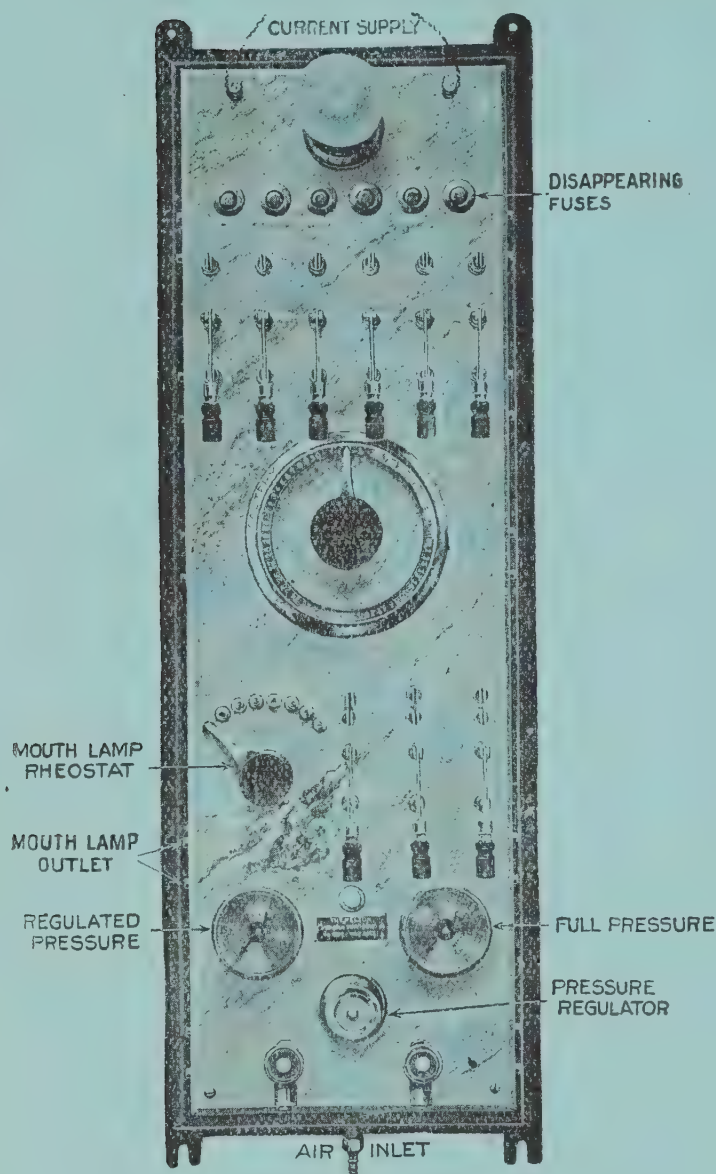
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THE PELTON & CRANE COMPANY
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Ash's Canadian Monthly Circular

VOL. I.

TORONTO, DECEMBER 1, 1910

No. 3

PUBLIC HEALTH.

The recent examination of the teeth of the children in some of the Toronto schools, it is to be hoped, will not be without good results. While the reports published in the daily press were most alarming from a layman's standpoint, they had the undoubted effect of arousing the interest of the people. The Board of Education, knowing this, cannot very well let the subject drop. The idea of instituting two establishments, one in the East and one in the West, in the nature of Free Dispensaries, has been mooted by certain members of the Board. This plan would, of course, not be feasible. In the interest of the public health the mouths of young Canada must be attended to, and those whose parents cannot pay a regular fee, must have Dental attention without money and without price, just as they have medical or surgical aid. All the progressive cities of both the Old and New World are recognizing the necessity for this, and are meeting the need. The old saying that one cannot expect a healthy mind on an unhealthy body is true, but no truer than the saying that a healthy body cannot be expected from a diseased mouth. The mouth is the gateway to the human system, and must be kept clean and healthy at any cost. The public generally pays more attention to the mouths of its horses and cattle than to the mouths of the human young. If you desire to sell a horse or a dog to your neighbor, the first thing he looks at is the mouth of the beast. If the teeth are bad, he does not buy, he apparently knows that a horse with poor teeth is a poor horse, it cannot properly masticate its food, it will be ailing and cost him money. The most ignorant farmer or a totally uneducated Indian knows all this and buys or barter accordingly. We are vitally interested in the type of boys and girls that are to be the assets or liabilities of Canada, and the physique, and physical and moral strength, the stamina, will all steadily deteriorate if the Dental needs of the young in our schools are not properly attended to. These needs do not in any way stand second to medical attention. The recent examination showed many children suffering from shock-

ing mouth conditions, which stunted their mental and physical development. This condition, if allowed to go on even for a short time, robs the child of development that can never be regained, and if allowed to continue for any length of time leaves a system that the most eminent of physicians cannot benefit. The Dental Profession and those members of the Laity that are interested in the Public Health have a grave duty to perform, by continuing the agitation for this most needed reform. The question must be looked upon in a broad, common sense light. It will cost a lot of money to equip and properly operate a system to meet the need. The citizens, if they are made thoroughly conversant with the gravity of the situation, will endorse considerable expenditure to this effect, and there are many wealthy people who will voluntarily aid a properly prepared and comprehensive scheme to ameliorate this rapidly increasing menace to public health. F. N.

SOME POINTS IN CONNECTION WITH THE TEMPORARY TEETH.

DENTAL CLINICAL LECTURE.

By J. B. Parfitt, L. R. C. P., M. R. C. S., L. D. S.

I have from time to time been asked, "Is it necessary to fill children's first teeth?" And I expect it will be many years before that question has been asked for the last time. Fortunately, parents are showing an increasing interest in the care of their children's teeth, and it is certainly our duty as dentists to lose no opportunity of educating them in this matter, and especially must we be able to give them a clear and well-reasoned reply to all such questions. To do so satisfactorily we must ourselves have a very clear idea of the influence of the temporary teeth on the child's present and future well-being.

A defective condition of the temporary teeth brings in its train many evils, especially pain, septic infection, and loss of masticating power. The presence of a single tender tooth will cause a child to bolt his food. The other teeth, from loss of function, get foul, and probably carious, thus completing the vicious circle, and leading to irregularity and carries of the permanent set.

The narrowing and caving in of the arch is further helped by lack of development of the tongue, due to its partial disuse. The septic conditions of the mouth, combined with food bolting, will in a young child often bring on an intractable kind of indigestion, with chronic pain, intestinal disturbances, and perhaps

an upset of the nervous system as well. This food bolting and digestive disorder may quickly become fixed as habits, and lay a sure foundation for mischief that may persist through life.

It has been conclusively shown by Mr. Turner that imperfect development, or even such a gross deformity as dilaceration of a permanent tooth, is not infrequently caused by an abscess arising from a temporary predecessor.

I have said enough on the importance of the deciduous teeth, and will pass on to the question of their preservation. Two problems present themselves to us—the treatment of the child, and the treatment of his teeth.

As in the case of adults, it is impossible to get much satisfactory conservative work done without some co-operation on the part of the patient, but children are so different in feelings and actions from their elders that their treatment is an altogether different kind of task.

Having little experience of dentistry, good or bad, children do not, as a rule, meet trouble halfway, so we do not get that minor insanity that some grown-ups refer to as their “nerves.”

One great aim we must keep continually before us will be to avoid giving the child any terrifying experience that will upset him for the future; many a child is spoilt for years by some rough dentist who most likely says he has no time to fuss, tells the child he is not going to hurt, and then perhaps holds his jaw in a vice-like grasp and extracts several teeth. Not only is subsequent treatment made very difficult for such a child, but, unless his parents are firm, he will not go near a dentist for years, and perhaps grow up with a wrecked set of teeth.

Children, unless spoilt, will generally believe what you tell them, so on no account must they be deceived, or good-bye to your influence over them. If any really painful operation has to be done, a child should have an anaesthetic; in fact, it is more important for him than for an adult.

It is often well to do very little at the first visit; the child finds out that you are not so dreadful a person as he thought, and the next time will let you do pretty much what you will. Sometimes several visits have to be paid before this desirable understanding is arrived at.

Children have lively imagination and great curiosity, and my experience has been that many, if not most of them, look upon a visit to the dentist as a sort of amusement. They notice, and ask questions about everything: “How do you make the engine go?” “Where does the water in the fountain bowl come from?”

The water syringe is great fun, and mixing cement and sharpening instruments most interesting performances.

It is in the intervals between these various happenings that we get spells of opening the mouth and having excavating or filling done. Children are easily tired, and cannot be expected to exercise much self-control; hence the visits should be short, say not much more than a quarter of an hour.

All that can be said on the subject of treatment of adults, with reference to gentleness, avoidance of pain by use of sharp instruments, or other means, applies to children tenfold. Children respond easily to suggestion, and you will always find that after you have made a good beginning with the eldest of a family, the others will appreciate praise, and if they have tried to help you, a little commendation and a good report to the mother, if she is with them, will greatly help matters in the next visit.

We may turn now to the consideration of the treatment of the temporary teeth. Far more important than the cure of the caries is its prevention.

Unfortunately, the statistics now being gathered in show a truly terrible condition of the teeth of children in the elementary schools, and the fact compels us to admit that we have hardly even begun to solve this problem. Immunity from caries is still largely a matter of mystery, but we have every hope that it will not remain so for ever, perhaps not for long.

The condition of the general health can hardly fail to have an important influence on the incidence of caries, although in individual cases it is often difficult to trace the exact connection. At times, however, an attack of caries may reasonably be considered the result of some special illness.

One little girl, whose teeth I have seen from time to time, was quite free from decay until she was about three years old. She had then an illness, said to be influenza, which lasted about a fortnight. Part of the time her mouth was inflamed, and ulcerated. After a few weeks small cavities began to be discovered in the molar teeth; these were filled, to the number of seven or eight. The last of the crop was filled a few weeks after the first was discovered, and from that time the child was immune for several years.

Bottle-fed babies are generally supposed to be at a disadvantage compared with those fed naturally, but, unfortunately, natural feeding does not necessarily result in the child having a good set of teeth. I know of two little girls, first cousins, and both breast-fed; one of them has very good teeth, while the other's decayed very soon after they erupted.

Dr. Sim Wallace has made some very interesting observations on the decay of children's teeth. Put very briefly, his conclusions are that immunity from decay varies with the exercise of the

functions of mastication. As he well points out, vigorous mastication of food worthy of the effort will both cleanse the teeth mechanically and promote a great flow of saliva, thus further cleansing them both at the time for eating and for some while afterwards. Together with other valuable advice, Dr. Wallace recommends that children should at no time be fed on soft "pappy" food; directly they begin to eat solids at all, they should eat hard things, such as crusts, and toast, and soft, smooth and stodgy food should be avoided. A child so fed will, he says, masticate his food rather than bolt it, and will have little taste for sugar and sweet things.

Meals should not be too frequent, and the last thing eaten at a meal should be something that requires a good deal of mastication, and has a flavor likely to cause a vigorous flow of saliva; a hard apple seems to answer the purpose very well. Dr. Wallace's conclusions seem so reasonable that one feels that there must be some truth in them, and it is noteworthy that in the case of some children whose feeding he has been able to direct, most encouraging results have followed from the observance of these simple rules.

If we find a child's teeth decayed, the first thing to be decided is, Shall they all be saved, or must any of them be extracted?

For the sake of the regularity of the second teeth, we wish to retain those of the temporary set until the normal time for losing them.

Our immediate concern is, however, the child's health, and unless a tooth can be made both comfortable and free from septic trouble, I certainly think it ought to be extracted without delay. Especially should extraction be resorted to if there is any sign of gland enlargement, any otherwise incurable abscess or ulcer, or if it is loose and tender, and near its normal time for being lost.

Again, if the patient is a nervous, weakly child, suffering from pain and loss of sleep, extraction should be preferred, unless the trouble can be cured at once by conservative treatment. Fortunately this can often be done. I heard a dentist say the other day that it is very easy to stop a child's pain, but quite the reverse to stop his teeth. The difficulty is due partly to the fact that the patient is a child, with all a child's psychological peculiarities, but is also in no small measure caused by the smallness of his teeth and the relatively great size of their pulps, which, moreover, readily die from small degrees of irritation. Fortunately for all concerned, the temporary teeth, are as a rule, far less painful than the permanent ones. I have more than once heard children say they liked having the engine used, and have even at times known them feel little or no pain from touch-

ing an exposed pulp. On the other hand, they seem to object to any pressure on the teeth, such as would be exerted by using an enamel chisel at all vigorously. And, above all things, they object to a nasty taste. We ourselves are a little liable to forget how nasty most of our favorite drugs are. Anyone who smears a little clove oil on the tip of his tongue will soon understand what I mean, and some of the other things in common use are worse than clove oil.

If a child is fairly docile, we should always aim at doing what may reasonably be called permanent work.

Cavity preparation is sometimes a trying performance for the operator, as some children will only keep their mouths properly open for a few seconds at a time. If progress is to be made, every stroke must accomplish some definite object. To do this tools must be in good condition, burs should be quite new, and excavators as sharp as stones can make them. The intervals of rest are often best employed in retouching the instrument edges for the next stroke.

If the teeth happen to be painful to excavate, a temporary filling, composed of zinc oxide and zinc sulphate, with two or three per cent. of paraform, will greatly help, and will generally make it easy to complete the fillings at the next visit. I think the ideal fillings for temporary teeth are translucent cement for the front of the mouth, and amalgam lined with cement for the back.

Filling with translucent cement will present little difficulty; the cavities are generally of retentive shape when the decay is removed, and they can be kept dry long enough to get the cement packed and varnished. The molar teeth are more difficult both to get at and to keep dry. A rubber dam is generally out of the question and a saliva tube often more nuisance than assistance.

In the case of interstitial cavities, oozing from the gum may be largely prevented by application of adrenalin solution on wool. The actual filling is accomplished by working with one hand, leaving the other at liberty to hold a wool roll down on each side of the tooth to be filled. The instruments must, of course, be all placed in readiness, and the amalgam and cement mixed before placing the rolls in position. The cavity can then be rapidly dried and the filling placed before the rising flood of saliva reaches it. If the child is too young, or too easily tired for you even to accomplish this much, do not scruple to temporize until something better can be done. In very young children copper amalgam often does good service, especially in crown fissure cavities. It will hold in and preserve the tooth to quite a surprising extent, even when a minimum of excavation has been possible, and the filling has been made in a wet cavity. Another material to temporize with is the pink base-plate gutta-percha.

If it is impossible to get satisfactory preparation done for adjoining interstitial cavities in molars, it will be found that although each by itself is non-retentive, they will easily hold a plug of gutta-percha between them. The teeth can by this means be kept going for months, or until proper fillings can be made. A temporary filling that I find quite invaluable is made by mixing the zinc oxide and zinc sulphate powder with carbolized resin, and then thoroughly incorporating the paste with some fibres of cotton wool. The plug so made, if about the consistency of plasticine, can be made to stay in almost any cavity, wet or dry. It can be pressed into place and moulded to shape with a wad of wet cotton wool, and after a few hours sets into a hard, tough mass, which, if the cavity is at all retentive, will withstand the force of mastication for a considerable time; in fact, it seems to get harder the longer it remains in place. The carbolized resin in it gives it all the antiseptic and annodyne qualities of a carbolic dressing. Exposed pulps sometimes prove troublesome. Personally, I feel rather chary of applying arsenic to them for fear of setting up trouble in the soft tissues round the root; if it is used at all, it should be removed in one, or perhaps two days' time.

A very simple way of dealing with an exposed pulp is to break up the coronal part of it with a bur while the child is under gas. Septic pulps are easily treated unless there is any considerable inflammation, in which case, of course, it is better to extract the tooth. When there is only a mild degree of trouble, opening of the pulp cavity, well syringing it with water or weak peroxide of hydrogen, and sealing in an antiseptic dressing, will work a rapid cure.

Tricresol and formalin is an excellent material for a dressing; so is cinnamon oil with a little paraform rubbed up in it. If a plug of wool, soaked with either of these fluids, is placed in the pulp chamber and sealed in with some easily removable water tight filling, the inflammation will rapidly disappear and the tooth become firm and comfortable. At the next visit the roots can be filled with an antiseptic paste, made by mixing the zinc oxide and zinc sulphate of paraform. It is best to give the root filling a few days' trial; if the tooth still remains in a satisfactory condition the permanent filling may be inserted.

Finally, I would mention that the temporary teeth vary very much in value. The canine and the second molar are much more valuable than any other single teeth, because they are retained such a long time in company with members of the permanent set; if decayed, these teeth may easily spoil their permanent neighbors and so start caries of the second set.

THE USE OF ALL-PORCELAIN TEETH IN VULCANITE DENTURES.

The use of Ash's Dowel Crowns and Non-Platinum Tube Teeth, in Vulcanite Dentures, has been so fully described by Messrs. Goodhugh and Phillips that many members of the profession are by this time quite familiar with their advantages.

The object of the present paper is to describe new posts, which render cementing-on unnecessary and reduce the cost of dentures made with All-Porcelain Teeth.

The special features of the Dowel Crowns and Non-Platinum Tube Teeth to which attention is drawn are these:—

1. The extra room which is gained in the mouth for the free action of the tongue, owing to the vulcanite not being carried so high up the teeth as is usual with pin teeth.

2. The clean and pleasant feeling which the patient experiences through the contact of the tongue with porcelain all round the arch.

3. The very natural appearance of the teeth owing to the lingual surfaces not being backed with vulcanite.

4. The pleasing shapes of the teeth and their delightful translucency.

5. The open cleansing spaces which they present, no matter how closely or irregularly the bases may be set together.

6. The bulbous formation of the teeth, which gives a restorative fulness to the lips and cheeks—an aesthetic feature of great value.

7. The way in which they lend themselves to that artistic irregularity of setting-up which conceals artificiality.

8. The strength of the non-platinum tube teeth, and their adaptability in the bicuspid and molar regions; they require very little or no grinding for the average vulcanite case, and are the strongest and densest teeth in existence for vulcanite work.

9. The value in repairs of both the Dowel Crowns and the Non-Platinum Tube Teeth; it is so great that any tooth in a denture can be easily replaced should it be broken by any chance.

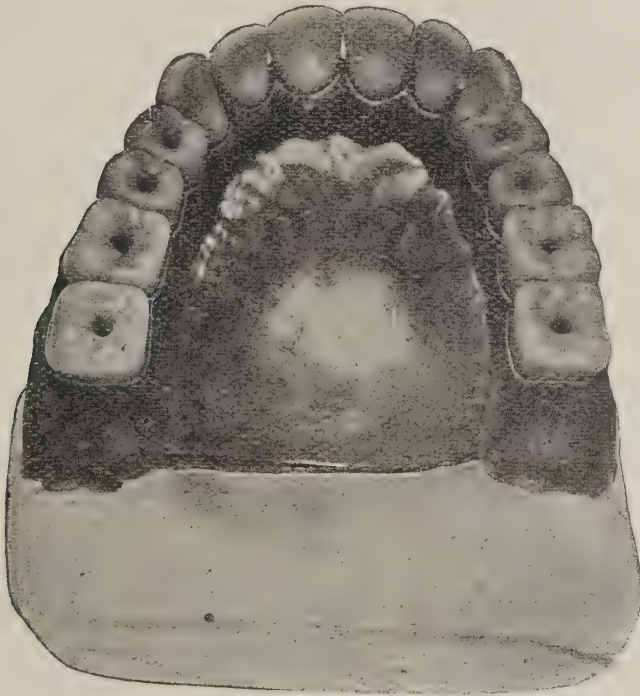
METHOD OF WORKING.

The Base-Plate.—To prepare the base-plate for this method of working, a tin die is cast in sand from the plaster of Paris model. On this tin a soft metal base-plate of the thickness of the required vulcanite plate is swaged, in Ash's Rubber Block Swager, and fitted to the plaster model. The tin is then taken in wax on the soft metal base-plate.

This admits of a correct bite being obtained, since the soft metal does not alter in shape like a composition base-plate is apt to do.

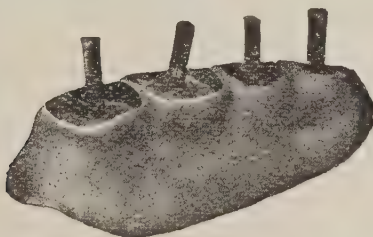
The models are then articulated, the wax blocks are removed from the soft metal base-plate, and the teeth are mounted on it with wax.

Fig. 1.



Case set up in Wax on Soft Metal Base-Plate.

Fig. 2.

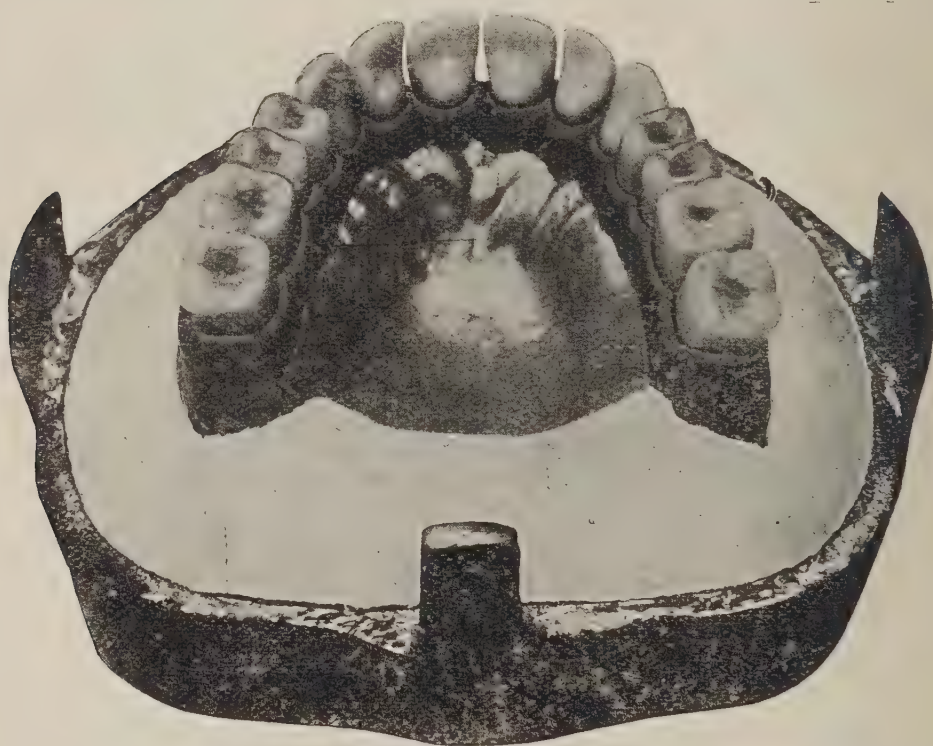


Piece of Vulcanite with posts which shows the sockets in which the teeth sit in the finished denture.

Waxing-Up.—In waxing-up the teeth on the soft metal base-plate it is most important to bring the wax up to within a sixteenth of an inch above the bases of the teeth all round, as shown in Fig. 1. This arrangement yields a socket for each tooth, as shown by the spaces in Fig. 2, in which a snug fit is obtained when the case is vulcanized. It is very necessary to fill up the tubes in the non-platinum tube teeth with wax, as shown in Fig. 3, to prevent the plaster running into them when the case is flaked.

Flasking.—The case is sunk, teeth upwards, in the bottom half of the flask, with all the teeth and wax exposed, as illustrated in Fig. 3.

Fig. 3.



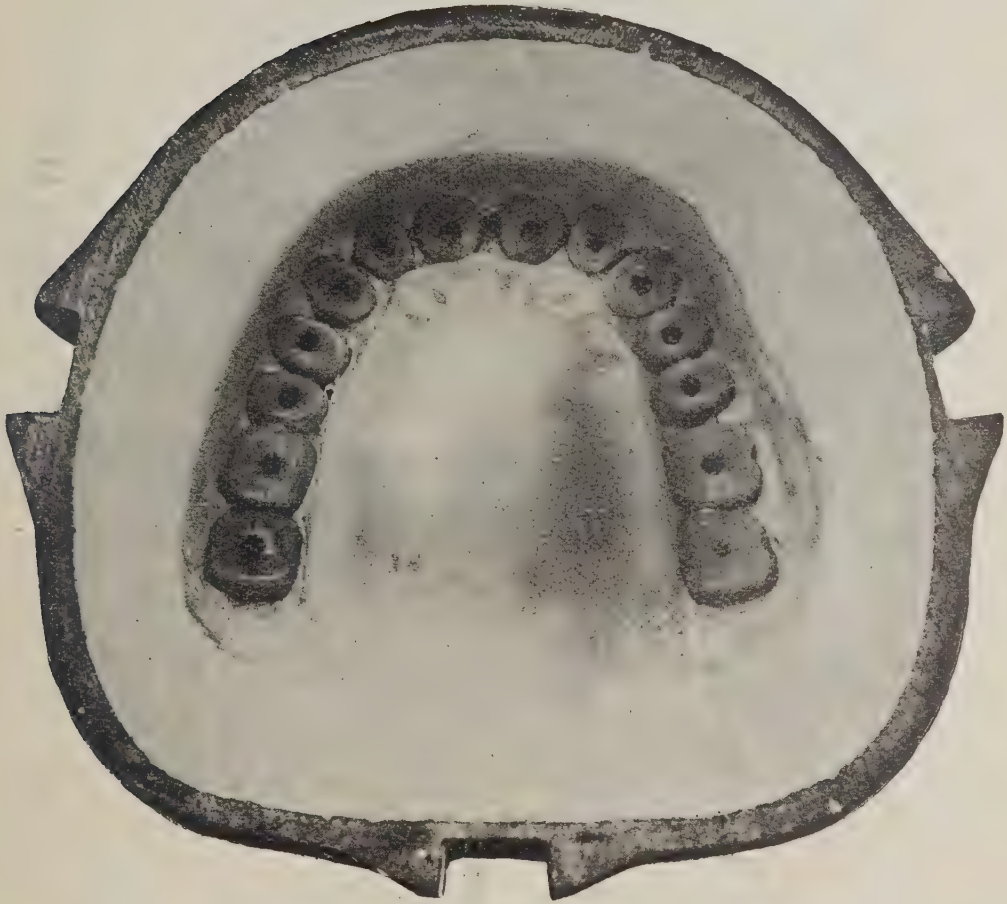
Soft Metal Base-Plate with Dowel Crowns and Non-Platinum Tube Teeth waxed up and embedded in lower half of flask, with the teeth upwards and the tubes filled with wax.

Before pouring the plaster into the top of the flask, it is essential that the plaster—the plaster only—in the bottom half of the flask be oiled, to prevent any adhesion when the two halves are parted.

The plaster is then poured in the top half of the flask, the two halves are fitted together and closed down in the flask press. When the plaster has thoroughly set, the flask is slightly warmed

through, before the two halves are parted. Particular care is taken not to overheat the flask, as the wax is liable to be absorbed by the plaster if overheating takes place.

Fig 4.

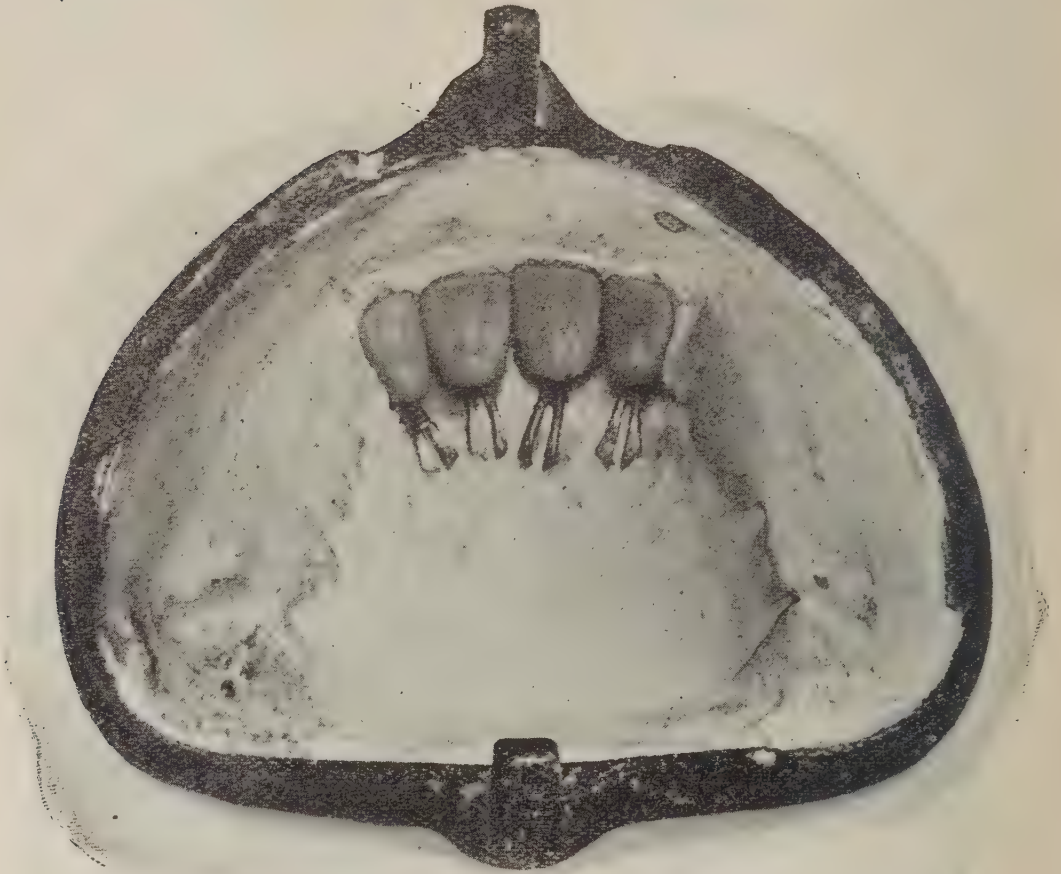


Teeth embedded in upper half of flask after the wax has been scalded out, basal surfaces upwards.

On the flask being parted, the case should come away in the top half of the flask.

The wax is then boiled out and the soft metal base-plate is removed, as shown in Fig. 4. The posts or tags are then cut to the proper length and fitted to the teeth.

Fig 5.



Vulcan Tag-Posts in position in Flask.

Fig. 6.



A. Ash's Aluminum Alloy Post roughened.



B. Vulcan Tag-Post.



C. Vulcan Tag-Posts in Crowns.



D. Ash's White Metal Crown Posts.

Posts.—After numerous experiments and comparative tests with different kinds of posts, we find that the post suitable for dowel crowns and non-platinum tubes which are sunk in the rubber, as shown in Fig. 2, is Ash's Aluminium Alloy—A, Fig. 6—which is specially roughened to give the rubber a good hold.

For use in partial cases, with isolated crowns or tubes, and with crowns or tubes which are let down on to the gum, the Vulcan Tag Post—B, Fig. 6—is the best; it is very thin, stiff and unbreakable.

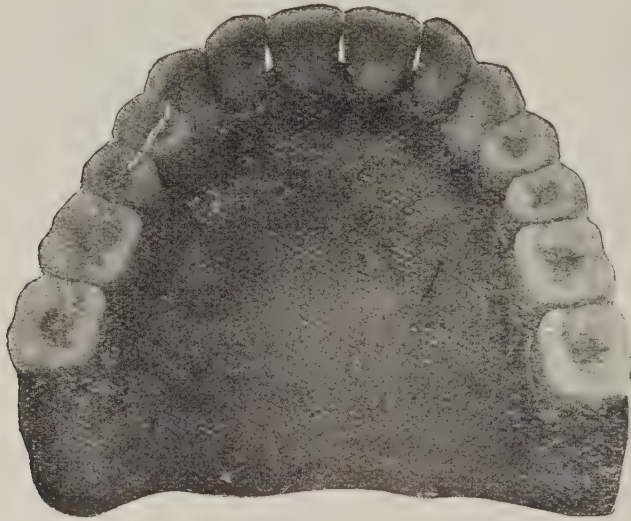
Before the posts are fitted the half of the flask which contains the teeth is seated, small pieces of the rubber for base are packed into the holes of the crowns or tubes, and the posts are pressed into this rubber. This insures the posts being covered with rubber.

The holes in the crowns and tubes being roughened as well as the posts, absolute contact is secured, and no cementing-on is necessary.

The palate and buccal surfaces are then packed with small pieces of rubber and the flask is closed in readiness for vulcanizing.

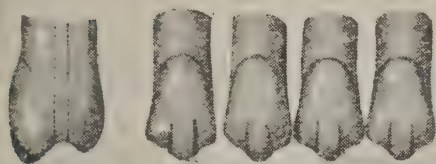
Vulcanizing.—The case is vulcanized, according to the directions generally given for vulcanizing, namely, at 315 deg. Fahrenheit, for 75 minutes, after the temperature has been very gradually raised to this point. In accordance with the most recent recommendations the thermometer and gauge are used together.

Fig. 7.

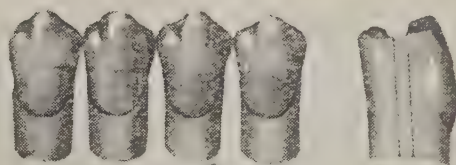


An Upper Finished Denture.

Illustrations of some of the Popular Moulds in ASH'S NON PLATINUM TUBE TEETH



300



315



301



314



302



313



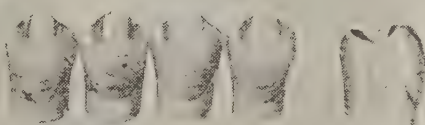
303



312



304



311



305



310

CANADIAN PRICES

Ash's Mineral Teeth

Owing to the great advance in the cost of Platinum, our Mineral Teeth have been advanced in price from December, 1st as per the following schedule.

	Single	100 Teeth	500 Teeth	1000 Teeth
Flat Teeth	.22	.20	.18½	.18
Plain Vulcanite	.18	.17½	.16½	.16
Diatoric Teeth	.04		.3¾	.3½
Combination Sets of 14	1.40			
Combination Sets of 28	2.80			
Tube Teeth without Platinum Lining.....	.12			
Detached Post Crowns	.12	.10	.9½	.9
Dental Alloy Pins, Single ..	.25			
Dental Alloy Pins, Double...	.35			
Base Metal Roughened Pin.	.05			

Above prices subject to **5** per cent. for Cash if purchase
amounts to \$25.00 or over.

Our Model Operating Room

Will give you some fine ideas in office equipment and decoration. If you are in Toronto it will pay you to call and inspect the only Model Room in Canada.

Second-Hand Goods

1 Ritter All Cord Engine, Wall Type, 110 Volts, Direct, Nearly New, A 1 Condition	\$75 00
1 Ritter Cable Engine, 110 Volts, Direct Cur- rent, Fair Condition	40 00
1 Ritter Overhead Cable Type Engine, 110 Volts, Direct Current, Excellent Condition	65 00
1 Betz Electric Engine, Overhead All Cord Type, 110 Volts, 60 Cycles, Alternating Current, in Good Condition.....	40 00
1 Columbia Chair, Maroon Plush, Good Con- dition.....	70 00
6 Elgin Casting Machines, No. 2, Good as New, each	25 00
1 Davis Gasometer, less Face Piece and Tubing Excellent Condition	18 00
1 Pelton No. 1 Furnace with Pyrometer, A 1 Condition	65 00

MOUTH MIRRORS



Since advertising our CONE SOCKET MIRRORS at 25 cents each in last month's MAGAZINE, we have sold many hundreds of them.

We want to attract your attention also to our

Metal Handle Mirrors

25 Cents Each

We have a fine stock of these and can supply them either PLAIN or MAGNIFYING in the various sizes.

A request postal will promptly bring one to you.

Globe Regulating Appliances

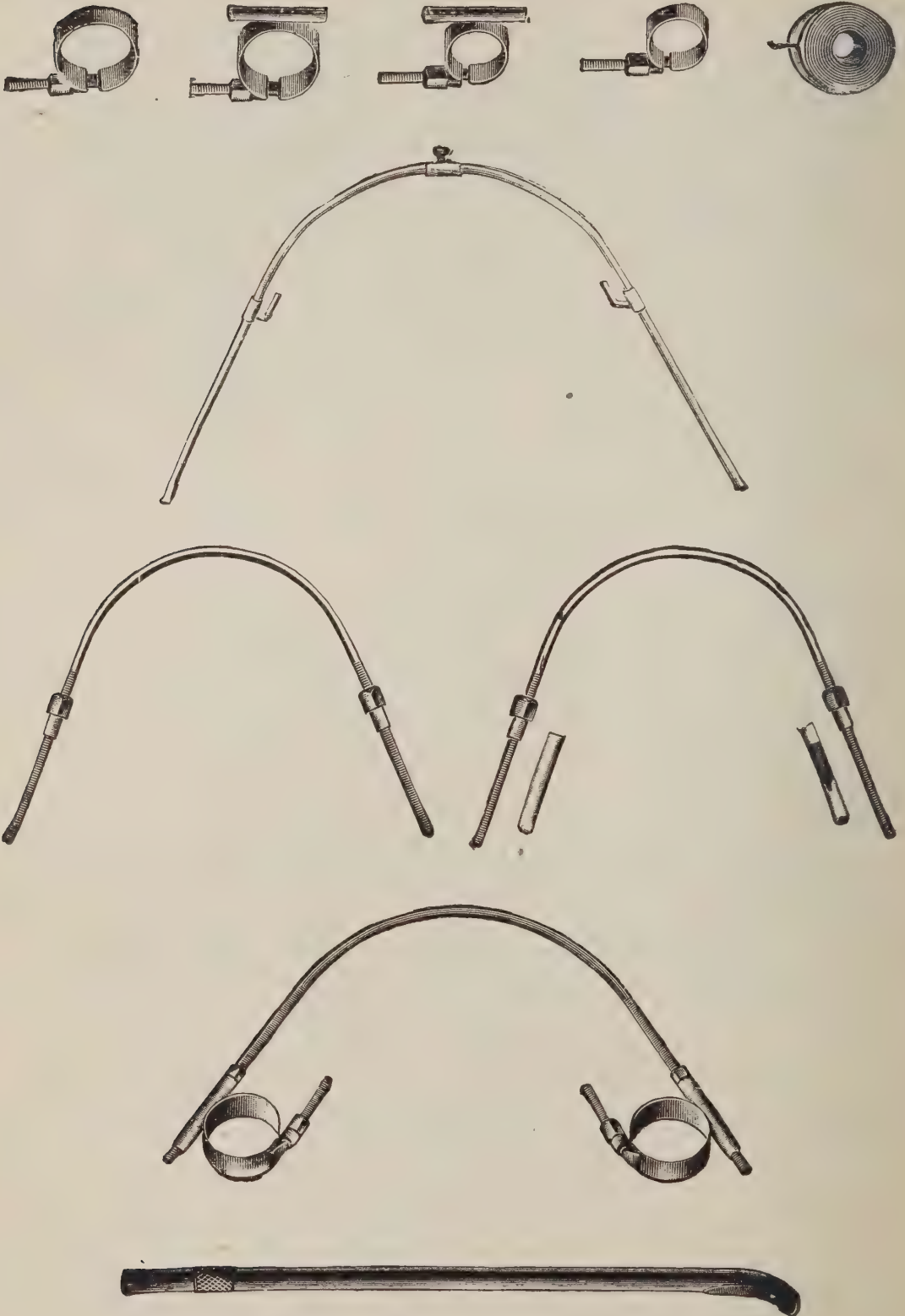
The various parts of the Globe Appliances are made of reliable and suitable alloys, heavily gilt, and are considered exceptionally high class by the most eminent orthodontists. The quality, patterns and prices appeal to all practitioners who will also find it less expensive to employ them than to make similar appliances themselves.

No. 1.	Molar Band.	\$ 80
No. 2.	Bicuspid Band.	80
No. 3.	Molar Band with tube.....	85
No. 4.	Bicuspid Band with tube.....	85
No. 5.	Expansion Arch with nuts.....	1 00
No. 6.	Expansion Arch with nuts and tubes.....	1 15
No. 7.	Expansion Arch with two Molar Bands.....	2 25
No. 8.	Band Material 0.1 mm. thick.....	35
No. 9.	Contraction Arch with stud and hooks.....	1 15
No. 10.	Wrench.....	15
	Globe Regulating Wire, two gauges, per box.....	30
	Globe Regulating Rubber•Ligatures, per box.....	50
	Globe Regulating Head Gear with heavy bands.....	3 80
	Globe Regulating Chin Cap.....	1 75

Note.—The No. 5 Arch can be supplied ribbed as well as plain.

Illustrations opposite page.

Globe Regulating Appliances



What You Have So Often Asked For.



A POPULAR TEMPORARY STOPPING 30 Cents a Box.

It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50.**

SEND US AN ORDER NOW

Ash's Popular Stopping

FOR THE DENTIST'S HANDS

Ash's Refined Dental Soap

**In Boxes containing 1 Dozen Tablets
Per Box, 70 Cents.**

The ingredients used in ASH'S REFINED SOAP are specially prepared for cleansing purposes. The slight roughness which is at first felt each time a cake of the Soap is used vanishes when the Creamy Lather is produced by rubbing the hands together, and no sediment is left in the water.

The hands are rendered soft and smooth by the use of the Soap, and any hardness on the fingers or the palms of the hands is considerably lessened.

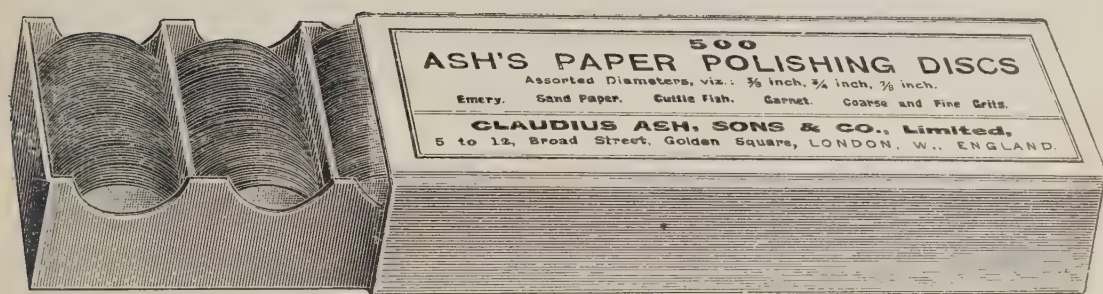
The Soap is a quick cleanser for daily needs, and rapidly removes stains, ink marks, grease, etc.

It lathers freely in the coldest and hardest water, and and is invaluable in a dental practice.

Every care is exercised in its manufacture, and it is guaranteed to be of uniform quality and purity.

IN ADDITION TO PURCHASING HIGH QUALITY DISCS

**The Preferential Tariff Saves You
Considerable Money.**



Ash's Sand, Cuttle, Emery or Garnet Discs

**Are made of Best Materials and cost
you less than others.**

Per Box of 100 Discs	.10
Per Dozen Boxes	1.00
Per Box of 500 Discs	.50
Per Box of 1000 Discs.....	1.00

HAVE YOU EVER

Examined the quality of your cast inlays, bridges, or cast Aluminum dentures when made by any other method than super-heated steam?

We would like the opportunity to demonstrate this important point to you.

The Solbrig-Platschik Press

Gives you cast gold and Aluminum of exactly the same texture as the beaten metal. No Brittleness No pitting of Aluminum.

Write us for information ; it will cheerfully be given.

If You Want to Insure Success

In the Casting of Gold Inlays and Gold and
Aluminum Dentures use

Solbrig's Embedding Material

The great amount of research work done by M.O. SOLBRIG, L.D.S. of Paris, has among other valuable results, given us the ideal in Investments. In the Embedding of large cases the most frequent cause of failure is through inability to properly surround the model, feeling certain that no air bubbles exist. Solbrig Embedding Material is mixed and poured like cream, giving absolute certainty of perfectly surrounding the model. The total absence of shrinking and cracking will delight you. It is a very open porous material, and allows a free escape of air from the mould.

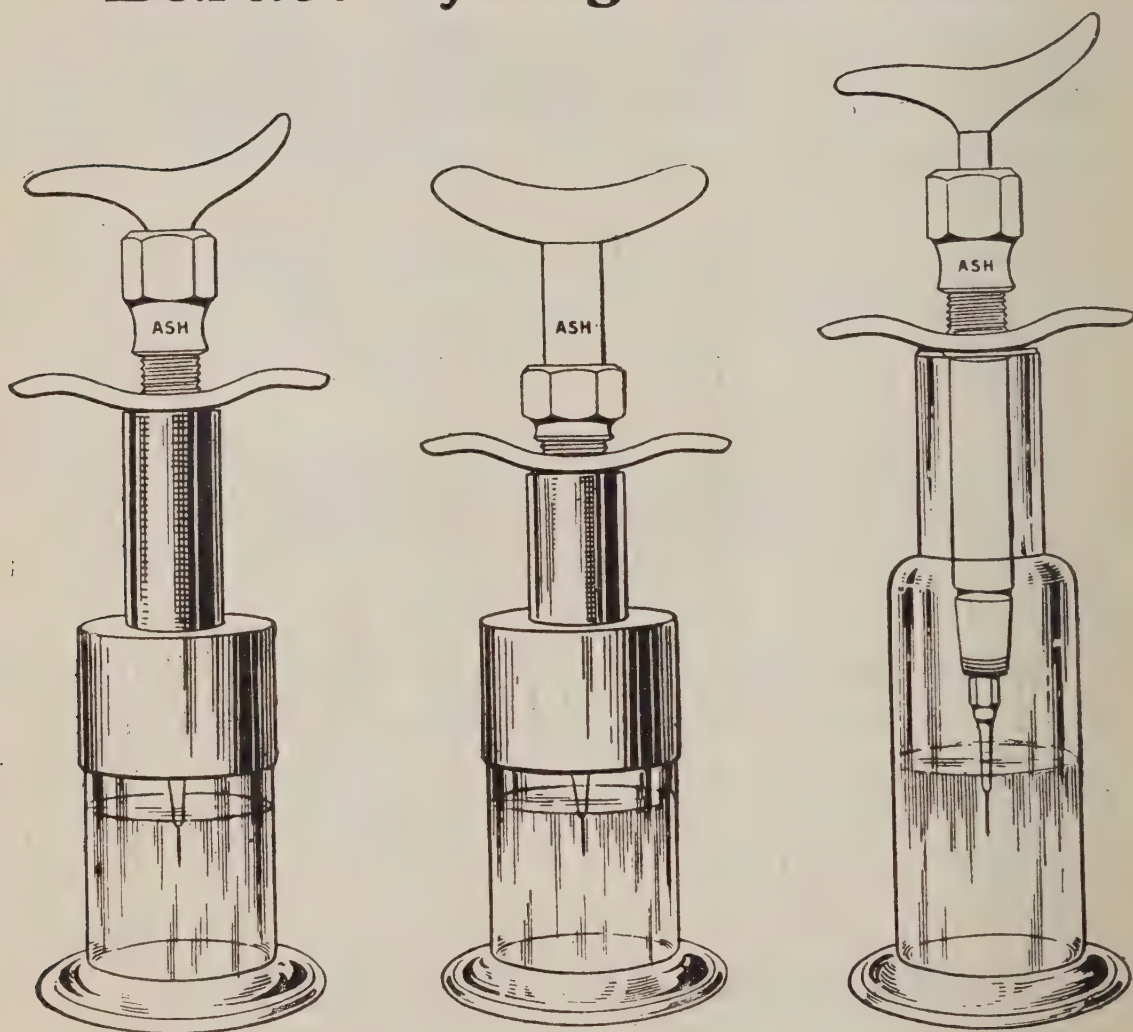
Tin containing 7 lbs., 80 Cents.

Tin containing 28 lbs., \$2.50.

Save Your Hypodermic Needles

Nothing aggravates the Dentist much more than to take up his Syringe after his last operation and find it *plugged*. He finds that he has laid it down after using and it has quickly rusted. His time is too valuable to waste drying the needle out. All this annoyance is saved by the

Bardet Syringe Sterilizer



Keep your needle on your Syringe in the Sterilizer immersed Lysol. Your needle will never rust, is kept in a sterile solution, is always ready to hand and looks well on your table.

In Neat Cardboard Boxes for Mailing, 65c. Each.

Medicine Bottles



A nice assortment of these bottles all labelled, makes a good impression. The labels on these bottles are burned on and are therefore practically indestructible.

We carry a good assortment of these labelled for the most popular drugs, but we will have the bottles burned to your order.

In Neat Cardboard Box, Each 40 Cents

Ash's First Quality Engine Burs

We carry in Toronto a large stock of these burs which are made of the best steel available. They are all British made on the most approved Bur machines known. They are attractively done up with a mica window to each package.

Note the prices. They have never been equalled by

HIGH QUALITY BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. These burs are of the highest quality, scientifically made and are as low priced as is consistent with ASH quality.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.94	\$.87
Rounds.	8 to 11	1.25	1.18	1.08
Wheels.	11 1/2 to 18	1.00	.94	.87
Wheels.	19 to 22	1.25	1.18	1.08
Inverted Cones.	33 1/2 to 40	1.00	.94	.87
Inverted Cones.	41 to 44	1.25	1.18	1.08
All Fissures.		1.00	.94	.87

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

ASH CROSS-CUT BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. The most rapid-cutting Burs obtainable.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.94	\$.87
Rounds.	8 to 11	1.25	1.18	1.08
Wheels.	11 1/2 to 18	1.00	.94	.87
Wheels.	19 to 22	1.25	1.18	1.08
Inverted Cones.	33 1/2 to 40	1.00	.94	.87
Inverted Cones.	41 to 44	1.25	1.18	1.08
All Fissures.		1.00	.94	.87

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

PALLADIUM ALLOY

A Splendid Metal for Dental Plates—As Easily Swaged or Struck-up as 20-ct. or 18-ct. Gold.

Some five years have elapsed since Palladium Alloy was unavoidably withdrawn from the market owing to the scarcity of pure palladium. This scarcity made the cost prohibitive, and rendered it impossible to continue the manufacture of the alloy at a marketable price.

A fresh source of supply has recently been opened up, which we believe will be permanent, and we are, therefore, induced to bring Palladium Alloy once more to the notice of the profession, remembering as we do, the great popularity which it enjoyed when it was previously introduced.

Palladium Alloy is a TRUE ALLOY. By this we mean that the palladium and silver of which it is composed are absolutely compounded together, hence there is no need to protect the silver by treating the alloy so as to produce a palladium surface. The ductility and malleability of Palladium Alloy are well known; they are such that a plate can be stuck-up with the ease which attends the striking-up up 20-ct. or 18-ct. gold.

In regard to the price of Palladium Alloy: In comparing it with the price of Dental Alloy, it must be borne in mind that bulk for bulk it is lighter than Dental Alloy, so much so that one ounce of it will go about as far as one ounce and a quarter of Dental Alloy.

PRICES

(Which are likely to be permanent.)

Plate or Wire.....per dwt. 88½c.

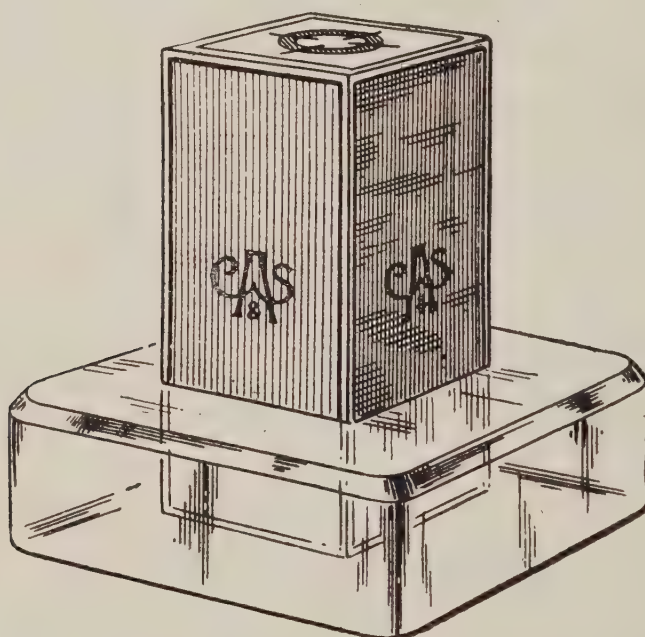
Ash's Aluminum Alloy

We can convince you that we have the best Aluminum Alloy on the market for Casting Dentures. It is scientifically prepared for use in the mouth. It combines strength and lightness, and flows smoothly and with little dross.

Price Per Packet 65 Cents

Ash's Aseptic Waste Receiver

(Glass Base)



Each 40 Cents

Cartons, Per Packet of 50 - 50 Cents

DR. MATHIESON'S NEW ANAESTHETIC

Antiseptic**LOCAL ANAESTHETIC FOR PAINLESS
EXTRACTION OF TEETH AND
MINOR SURGERY**

It contains no Cocaine

It is carefully manufactured and will not deteriorate

Its ingredients are thoroughly sterilised

It causes no sloughing or ill effects

Its ingredients are labelled on each bottle

Through use by many Dentists this Anaesthetic is well known, safe and satisfactory. You find it can be relied on for POWER and prompt ANAESTHESIA. NO FAILURES. Freedom from TOXICITY and IRRITANT effects.

For \$1.00

We will send you one THREE ounce bottle as a large sample to make a test that will satisfy in regard to what we claim.

1 Ounce.....	\$.75
3 Ounce.....	2.00
12 Ounce..	6.00

CLAUDIUS ASH, SONS & CO., Limited

13 GRENVILLE STREET, TORONTO

CHARLES L. DALY

The X. L. C. R. Dental Laboratory

We do not claim to specialize in any one Branch of Mechanical Dentistry. We state conservatively that we turn out work in all the following branches that cannot be excelled.

Crown and Bridge Work

Gold Dentures

Cast and Swaged Aluminum

Continuous Gum Work

Cast Gold Inlays

Bennett Extension Bridge Work

**Vulcanite and Metal Work with Dowel
Crowns and Tube Teeth**

Lingual Bar Lower Dentures

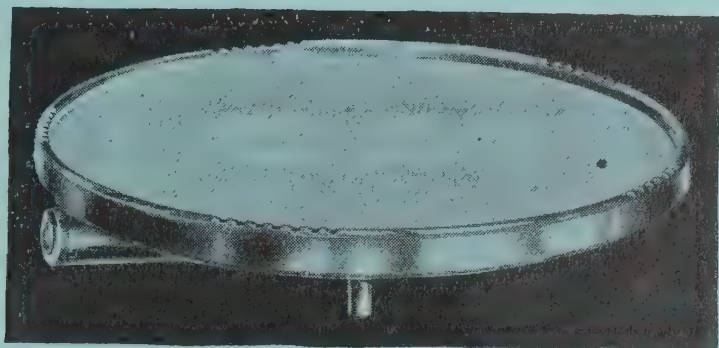


Write now for Price List, or better still, send us your next order.

X.L.C.R. DENTAL LABORATORY

2 College Street, Toronto

This is the New Consolidated



Aseptic Bracket Table

Made in the Consolidated Way

WORDS and pictures can convey only a small idea of its beauty. We want you to see this table. Go to your nearest dealer; ask to see the **Consolidated Aseptic Bracket Table**. Look at it critically. Admire the snowy-white top that is like highly polished agate. Examine the heavily nickel-plated frame, with notches at convenient intervals in its rim for your instruments. Notice the nickel-plated cotton-holder underneath the top, out of your way, and yet easily accessible.

¶ Consider how aseptic the whole table is. Just lift the top out of the frame and place it in your sterilizing solution. Observe that there are no bolts nor screws to be loosened or tightened, and note that the top is held firmly by the removable rim.

¶ This table is made to fit any bracket. The price is \$12.50; with Round Metal Alcohol Lamp and special cotton-receptacle, \$15.65.

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

NEW YORK
BOSTON

CHICAGO
DETROIT

PHILADELPHIA
CLEVELAND

Ash's Dowel Crowns

THE sale of these DETACHED POST CROWNS in Canada during the month of November has been phenomenal. Last month's output was more than double the October turnover, and we sold SOME Crowns in October.

Many Dentists are realizing what great advantage is gained by using ASH'S MOULDS.

The Price is More Than Attractive!
Have You Analyzed It?

The average Detached Post Crowns cost you
\$30.00 per 100.

**YOU GET 300 ASH CROWNS FOR THE
SAME MONEY.**

Just think of it—200 more Crowns at no
additional cost!

Send us an ORDER NOW. An assortment of 300 Crowns will give you a good office selection, and think of the saving!

PRICES :	Single Crowns	.12
100	-	10.00
500	-	47.50
1000	-	90.00

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

JANUARY, 1911

No. 4

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Treatment Fees

Notes on Soldering

Second-Hand Goods.

Advertising Section

New Goods and Novelties.

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CHRISTIANIA, Tordenkjoldsgade, 9

STOCKHOLM, Malmskilnadsgatan, 44

ST. PETERSBURG, 21 Gogolstr

MOŚCOW, Kusnetzki Pereulok, 3

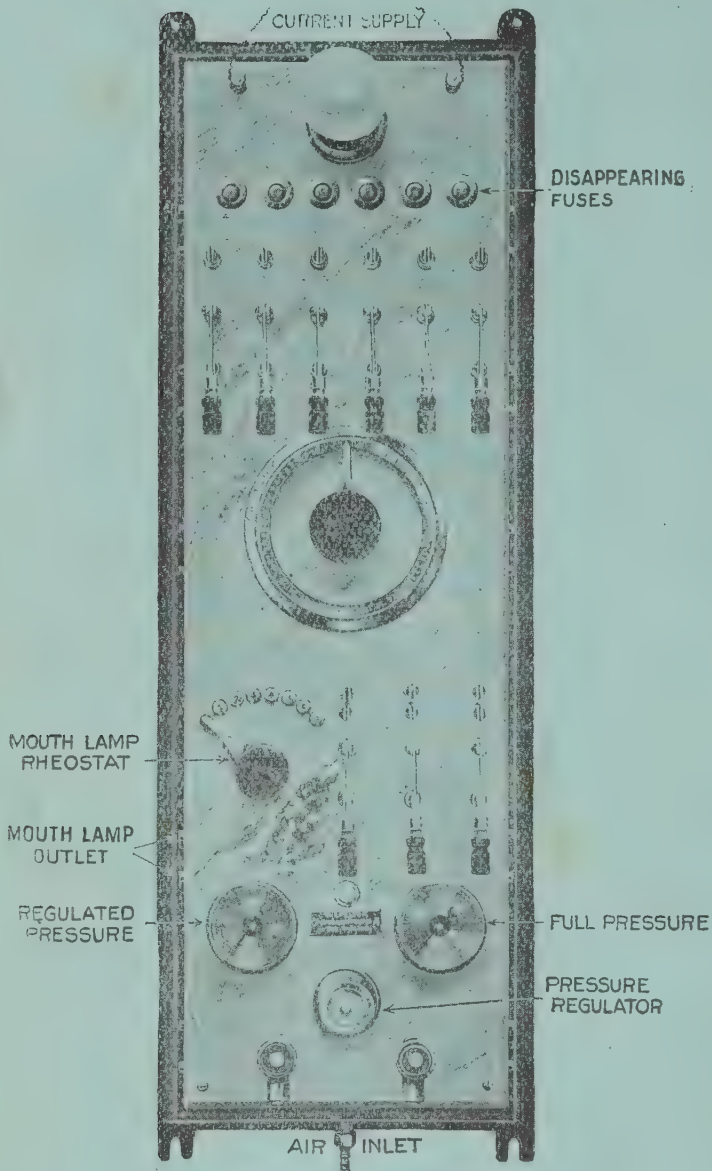
NEW YORK, 30 East Fourteenth St,

TORONTO, 11 and 13 Grenville Street

ALEXANDRIA, Trieste St. No. 1

CAIRO, 4 Taher Street, Opera Square

Further Proof of the Superiority of Pelton Universal Switchboards



Date of Sale 19..

We, the undersigned, Manufacturers of the

PELTON UNIVERSAL SWITCHBOARDS

do hereby agree to repair, free of charge, any part of Pelton Switchboard No. proving defective within five years from date, upon return of such part or switchboard to our factory, freight or express charges prepaid. We do not insure against fire or any injury that may be caused by any shock to the switchboard, such as a fall or blow.

Purchaser's Name

Address

Dealer

The Pelton & Crane Co.
Detroit, Mich.

¶ Six years ago, when the Pelton Furnace was but two years old, our experience with it had proved that we could give and stand back of a written guarantee for six months. ¶ We have never failed to maintain that guarantee, and the Pelton Furnace has proven its wonderful strength and superiority. ¶ A careful study of Switchboards, and the experience our customers have had, proves a five-year guarantee on our Switchboard possible. ¶ To be able to do this is a source of pleasure and satisfaction to us, and we believe it will mean additional confidence on the part of the purchaser. ¶ May we send our new catalog showing the different types with complete specifications? Free on request.

THE PELTON & CRANE COMPANY

Beaubien and Macomb Sts., Detroit, Mich.

CANADIAN PRICES

Ash's Mineral Teeth

Consequent to the further advance in the cost of Platinum, the following Prices on Teeth of our manufacture will take effect from January 2nd, 1911.

	Single	100 Teeth	500 Teeth	1000 Teeth
Flat Teeth	.25	.20	.19	.18 1/2
Plain Vulcanite	.20	.17 1/2	.17	.16 1/2
Diatoric Teeth	.04		.3 3/4	.3 1/2
Combination Sets of 14	1.52			
Combination Sets of 28	3.04			
Tube Teeth without Platinum Lining.....	.12			
Detached Post Crowns	.12	.10	.9 1/2	.9
Dental Alloy Pins, Single ..	.25			
Dental Alloy Pins, Double..	.35			
Base Metal Roughened Pin.	.05			

Above prices subject to **5** per cent. for Cash if purchase amounts to \$25.00 or over.

CLAUDIUS ASH, SONS, & CO., Limited

5-12 Broad Street, Golden Square

LONDON, ENGLAND

Canadian Branch—11-13 Grenville Street, TORONTO, ONT.

I

Ash's Canadian Monthly Circular

VOL. I. TORONTO, JANUARY 1, 1911

No. 4

TREATMENT FEES.

In discussing fees and conditions with many dentists, the same complaint is repeatedly expressed "I have so many treatments that take up so much time and for which I am unable to charge an adequate fee." This is no doubt a condition that bothers a great many dentists and is accountable to a great degree for small returns when the net results of the year's work are carefully figured out. For a long time it was impossible to offer any help or solution for this difficulty. Some little time ago a practitioner explained how he had finally shelved this nightmare of nightmares. He displayed in his operating room under glass cases four wax models, about six inches in height, beautifully executed and colored perfectly true to nature. One of these represented a complete molar tooth cut through the centre from top to bottom, showing clearly and accurately the enamel, dentine, cementum, pulp and canals all in a normal, healthy condition. The mate to this model showed this same tooth in a diseased condition. The other two represented an incisor tooth exposed in the same way, showing the condition in health and disease. It was then explained that when a case presented itself that involved considerable treatment with the chance of non-appreciation by the patient, the model most appropriate to the case in hand was produced and a few moments given over to explanation. The result was that in the great majority of cases a good fee was willingly paid. The average patient has but an ill-defined idea of the anatomy of the human tooth. He has a hazy idea of the pulp and root canal, limited generally by the knowledge of the pain inflicted by the proximity of the dentists instrument. When he sees a tortuous canal depicted in the wax model in a diseased condition and sees the difficulties that confront the operator in penetrating to the farthest ends, he is brought to a due appreciation of the situation, and seldom fails to realize that the skill and patience required to bring these parts to a healthy condition are more important than

the actual filling or crowning of the tooth. The actual cost of one or more of these models is not great and a complete set pays for itself in a surprisingly short time. There are many other uses that models of this kind can be put to in addition to being a handsome adjunct to any dental office.

NOTES ON GOLD SOLDERING, ETC., BY VARIOUS DENTAL MECHANICIANS.

By G. W.R.

To deal successfully with the question of attaching mineral teeth to a metal plate would cover many pages, and consequently would require more space than is at my disposal, I will therefore content myself with offering a few remarks as to what I think are the best methods to employ.

After having made the dies and struck up the plate, the next thing is to back the teeth with metal. To do this successfully several important points have to be taken into account.

First, the backings must be perfectly flat; secondly, the holds in the backings should be large enough; but not too large, only just sufficiently large to admit the pins of the teeth; thirdly, the holes should always be countersunk on both sides.

If the backings are in the least concaved, fracture of the teeth usually results, and although they may not break off the plate at the time, they invariably do so, sooner or later, on being worn in the mouth. For this reason, if a concave backing is fitted to a tooth when it is heated the metal expands, and, closing upon the outer edges of the tooth-substance, locks the air in, and forms a tiny vacuum; this brings about an enormous strain upon the mineral composing the tooth, and generally leads to a thin flake of the tooth-substance being broken away and adhering to the pins on the plate. If a concaved backing is placed upon a tooth and soldered to a plate as an experiment, and examined, after soldering, with a magnifying glass, a thin air-like line will be observed at the approximal edges; upon exerting a little pressure upon the tooth with the thumb and finger this flake-like fracture can be produced.

In punching the holes I always use Young's double-pin perforators, and employ the tooth as a guide in setting the punch holes in the needful position. I then carefully flatten the metal, punch it, and after clearing away any bur there may be round the holes, I thoroughly countersink them on both sides. This is important, especially if the pins are to be riveted, because in many cases the mineral composing the tooth will be found to

have encroached upon the pins in a thin cone-shaped shell. This is not easily seen, unless careful examination is made, as the platinum shining through gives the mineral a bluish-grey appearance which makes it difficult to detect the cone-shaped shell. It will, therefore, be obvious that if a backing is forced down by riveting, without the holes being countersunk, the risk of fracturing the tooth is greatly increased.

It would, of course, be futile to lay down any hard-and-fast rules as to whether the pins should be bent or riveted, but it is perfectly safe to say that in all cases where the bite will admit of it, bending the pins is the better way, and is attended with fewer risks.

We next come to the investment of the case. Great care should be used in the choice of an investing material.

1. It must be sufficiently coarse to allow the moisture to percolate freely through it.
2. It should not unduly expand or contract when heated, and at the same time it should be strong enough to support the case during the soldering process.
3. It should be entirely freed from all impurities before being mixed into a batter.

On no account should the sand be used from the casting-box in making the investment; it is altogether unsuitable for the purpose, since in making dies it becomes permeated with lead and zinc oxides, and if it is used when the teeth are being soldered on the plate, especially if the investment is overheated, these oxides are burnt on the teeth and bring about discoloration.

The best method to employ for heating-up is to place the invested case in the muffle of a gas or electric furnace, or, if neither of these is available, a small iron oven should be used and the case should be heated-up very slowly. The use of a furnace muffle or an oven secures uniform heat, whereas, if the case be placed upon a piece of gauze, or on an iron plate—upon a Bunsen burner, as is commonly done, the heat secured is not uniform, and such heat is a fruitful cause of disaster, owing to the fact that the lower part becomes heated before the upper part is warmed, which in many cases results in the tooth or teeth being broken right across the pins. If a case is treated in the right way, as described above, there is no need to wait until it is perfectly cold before removing it from the investment; it can, if necessary, be taken out quite hot without any danger of fracture.

The choice of a blowpipe rests entirely with the worker. What one man can use successfully another cannot use at all. There is still a large number of dental mechanics who think

that the only form to use for exact soldering is the mouth blowpipe, but there are many reasons why this form of blowpipe should be relegated to the museum. There are now so many good and useful mechanical blowpipes to be obtained which meet every demand that is likely to be made upon them, and are so entirely free from drawbacks, that, for my own part, I have no desire to continue the use of the mouth blowpipe.

By W. F. J.

To obtain success in gold soldering absolute cleanliness is most essential. Inattention to this most important point entails bad results. This piece of gratuitous advice is altogether superfluous to a good mechanician, but I am sorry to say that there are too many who are not as particular as they might be, if one can judge by the indifferent pieces of work which find their way to the laboratory in the shape of repairs. This is the first, and to my mind the most important step in the art of gold soldering, or any kind of soldering as far as that is concerned. Secondly, a perfect union of the two edges to be united is necessary. Wide spaces between band and plate should, of course, be avoided. These spaces can never be bridged with the solder, and filling-in with small pieces of plate is neither satisfactory nor workmanlike. On the other hand, on no account should the plate impinge too tightly on the band, so as thereby to cause the band or wire to tilt away from the tooth.

We now come to the application of the flux, which is borax. This cannot receive too careful attention, if neat work is to be obtained. A too lavish or careless application of borax will cause the solder to flow where it should not, and all the guiding and coaxing in the world will not prevent a certain amount of the solder from running on to the plate. The flux should be carefully painted round the line of the joint with a very fine camel-hair brush. A match pointed at one end will serve the same purpose. There is one more point which should not be overlooked, viz.: As small an amount of solder should be used as is consistent with strength.

The "heating-up" of a piece should be done very gradually, more especially when attaching teeth to a plate. To apply a fierce heat suddenly to a piece would result in the fracture of some of the teeth.

For investment some workers use the sand from the die-casting bench and mix it with plaster of paris, but this I consider rather a risky process, as there are invariably small particles of lead and zinc in the sand, and these fuse on to the gold plate and create an alloy when the piece is being soldered. Clean silver sand, kept especially for this purpose, is the best

and the safest material that can be used for mixing with plaster of paris in the preparation of a soldering investment.

By P. E. P.

There are three important points to bear in mind with regard to soldering, and these are: (1) Perfect cleanliness; (2) Neatness; (3) Uniform heat. If these are carried out, soldering is no trouble. This branch of mechanical dentistry is, in my opinion, a fine art, and therefore requires a lot of practice to become efficient in it. No matter how well a case may be set up, or how brilliantly polished, or whatever other part is done well, the case is not well made if the soldering is bad. This goes to prove that soldering is the principal part of a metal case. I give below a few notes respecting my method of soldering.

Blowpipes.—Of these there are two kinds, the mouth blowpipe and the foot blowpipe. For my own part I am not particular which I use, and am quite at home with either. Of course for large work the foot blowpipe is more easily manipulated than the mouth blowpipe; moreover, one can obtain more heat with it, the flame can be kept on the work much longer, and one hand is left free.

Soldering Fastenings to Plates.—After I have waxed the fastenings to the plate, I insert the whole in sand and plaster of Paris mixed in equal quantities, and allow the investment to harden thoroughly. Then I boil off the wax (I may say I do this because the plate is then free from any form of dirt). This done, I borax the two parts to be soldered—the borax having been previously mixed with distilled water, to ensure the absence of such foreign bodies as are found in ordinary water—place a piece of solder, according to size of work, between the joint, and set over a Bunsen burner with a small flame, the size of which I gradually increase until the plate is thoroughly hot. Then I direct the blowpipe flame straight on to the investment and gradually bring the flame round to the plate and fastening, without allowing the solder to be touched, with the result that the solder flows owing to the heat of the plate. To ensure strength I always bevel the plate towards the fastenings.

Of course there are other ways of doing such work, but after experience I find that this is best, as no risk is run of the fastenings dragging away from the natural teeth; it is also a much cleaner way than is usually adopted, and is well worth the extra time and trouble which it involves.

Backing Teeth.—The method which I adopt in backing is to bring the backing only three parts of the way up the tooth, as bringing it up to the top tends to darken the tooth. I then bend

the pins towards the centre. I find this quite as strong as any other method, and, moreover, it helps to prevent the solder from joining the teeth together, since only the proper quantity of solder is applied to each tooth.

Investing.—This is done in the same way as fastenings are invested. The teeth should be well covered up with a good thickness of sand and plaster all round. When the investment is thoroughly hard I boil off the wax as before, and place in an oven until all the moisture is driven out. I then let it cool, apply borax, three or four pieces of solder to each tooth, and set the work on a Bunsen as before. During the heating-up I endeavor to keep the work free from draughts, as the least wind often cracks a tooth. I am very particular about this. When the case is sufficiently hot I solder as already described, adding solder as required. After soldering I allow the case to cool down thoroughly. I find by my method of soldering that I have little to do when the case is cooled. I always find Ash's teeth and solder to be everything that is required.

By W. T. M.

In reference to the backing of teeth and soldering, I find Young's double-pin perforators the best for punching the holes. Great care should be taken to see that the pins are perfectly straight. Of course single-pin perforators are more generally used, but I prefer the former, as I consider them more accurate. It is very important that the backing should fit the tooth perfectly—a point which is often neglected. As regards the pins I invariably bend them over. I think this method is better than running the risk of riveting. Although it is sometimes necessary to rivet in cases in which the bite is close, it is better to bend the pins down if the plate will allow it, even if you have to file them a little at the end.

To invest the teeth I find Gartrell's material the best—two parts of Gartrell's to one of plaster of Paris. Silver sand is often used, but there is always the danger of it discoloring the teeth in the firing, which you will not find with Gartrell's. Salt is sometimes used for promoting quick setting, but that again is likely to discolor the teeth, whereas alum will not do so. When investing an upper or lower case it is advisable, when possible, to make a division in the centre, to prevent the case warping. Before soldering great care should be taken to heat the teeth gradually, to prevent them cracking. In using borax as a flux it should always be mixed on a glass slab, not a slate slab. Glass keeps the borax clean, which is very important. The secret of soldering to combine strength with neatness is to have perfect union.

Our Model Operating Room

Will give you some fine ideas in office equipment and decoration. If you are in Toronto it will pay you to call and inspect the only Model Room in Canada.

Second-Hand Goods

1 Ritter All Cord Engine, Wall Type, 110 Volts, Direct, Nearly New, A 1 Condition	\$75 00
1 Ritter Cable Engine, 110 Volts, Direct Cur- rent, Fair Condition	40 00
1 Ritter Overhead Cable Type Engine, 110 Volts, Direct Current, Excellent Condition	65 00
1 Betz Electric Engine, Overhead All Cord Type, 110 Volts, 60 Cycles, Alternating Current, in Good Condition.....	40 00
1 Columbia Chair, Maroon Plush, Good Con- dition.....	70 00
6 Elgin Casting Machines, No. 2, Good as New, each	25 00
1 Davis Gasometer, less Face Piece and Tubing Excellent Condition	18 00
1 Pelton No. 1 Furnace with Pyrometer, A 1 Condition	65 00
1 Portable Chair, Excellent Condition.....	15 00
1 Columbia Chair, almost new.....	80 00

ASH'S MINERAL FACINGS

FOR DENTAL REPAIRS

Made in the principal patterns and sizes of our Flat Pin Teeth.

The three sizes of our Mineral Facings, here illustrated, are sufficient to show the distinctive feature to which we wish to draw attention, viz., the oval cavity in the back of each.

They can be used for repairing nearly every kind of denture; they are easily applied, exceedingly durable, and can be quickly fitted—it does not take longer than from ten to fifteen minutes to fit one.

They are invaluable for repairs to Bridges, and in all cases of Plate and Crown Work in which a flat tooth has to be replaced.

The oval cavity at the back of each facing corresponds with the positions of the pins in our Flat Pin Teeth. The facings do not require backing, but can be applied to the backings of fractured or broken teeth when the broken portions of mineral have been removed from the backings.



83



71



14

DIRECTIONS FOR USE.

Chip away the remains of the broken tooth from around the pins in the backing, and roughen the backing with a suitable instrument or tool.

Make a thin mix of Ash's Inlay and Crown Cement, or other suitable Oxyphosphate cement, paint both the tooth backing and the new facing with a thin layer of it, press the facing firmly on the backing and keep it under pressure until the cement has thoroughly set.

Important Note.

On no account must any of the Silicate Translucent Cements be used for attaching our Mineral Facings to teeth backings, etc., because they are not sufficiently adhesive for the purpose.

Ash's Mineral Facings.....each \$.18

Ash's Mineral Facings.....per 100 15.50

ASH'S "C" STYLE CABLE ENGINE

A—Sliding Collar by means of which the arm is released when it is set at rest, as shown by the dotted lines in the illustration.

Engine with No. 7 Hand-piece and Flexible Wrist Spring.....\$23 50

Seperately :

Top part only..... 13 50

Base and Upright..... 10 00

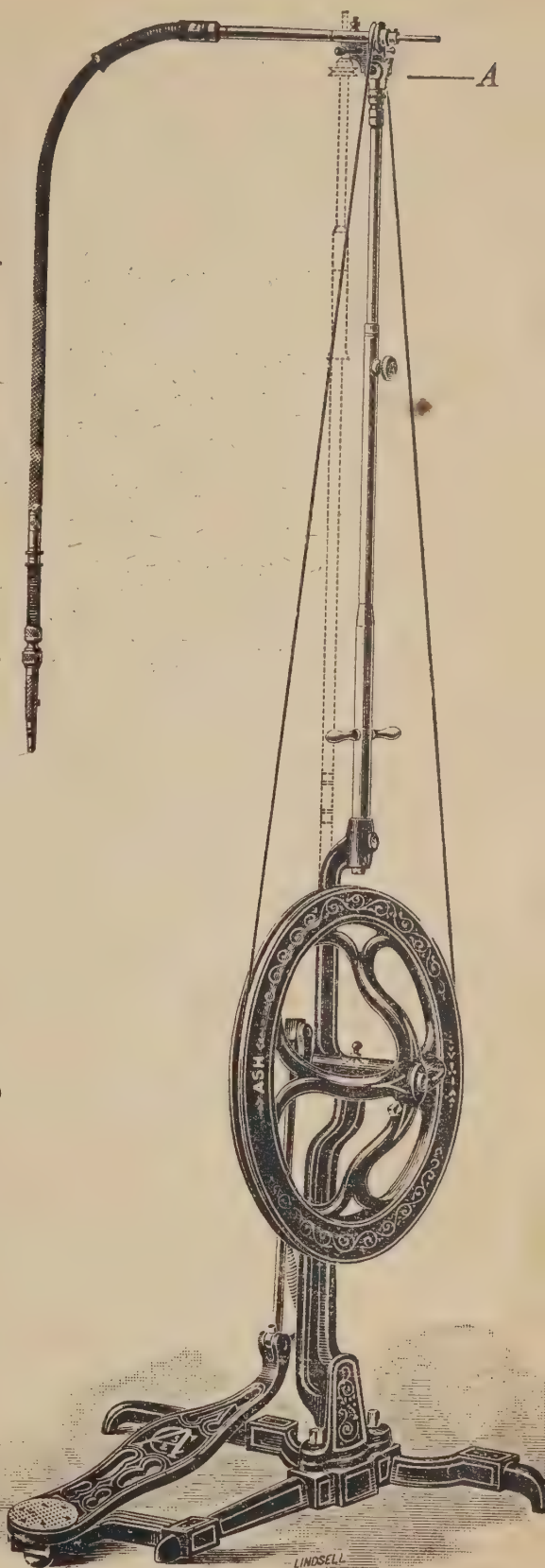
Engine with No. 7 Hand-piece, Flexible Wrist Spring, and No. 2 Slip-Joint Attachment.....\$28 50

Seperately :

Top part only..... 18 50

Base and Upright..... 10 00

10 per cent Discount for Cash allowed from above prices to students while in actual attendance at a Dental College.



Ash's Dental Rubbers

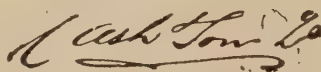
UNAPPROACHED FOR

**Excellency, Purity, Strength, Elasticity
and Density.**

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



in addition to the name of the Rubber.

Always ask for **Ash's** when ordering Dental Rubbers.

For full list of our Dental Rubbers showing **new** and **reduced** prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we given full **16 ounces** of Rubber to the **pound**, exclusive of the linen backing. We have also stated that **most** American manufacturers do **not** give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?

Ash's Dental Rubbers

Consequent to the easing of the market on Pure Para, we are pleased to be able to announce the following reduced scale of prices on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.50	\$5.00	\$4.75
No. IX Pink, Medium.....				
No. 1 Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....	5.00	4.50	4.25	4.00
No. 2X Pink, Medium.....				
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

S. P. Deep Pink.....	\$4.50	\$4.05	\$3.95	\$3.95
White, for Side Blocks, etc., Bone...				
Child's G., Bright Red.....				
A. E. Elastic, Dark Brown.....				
W. Elastic, Dark Brown.....	4.00	3.60	3.35	3.10
Whalebone No. 1, Dark Brown.....				
Whalebone No. 2, Light Brown.....				
Solid Base, Pink Brown.....				
Dark Red.....	3.00	2.75	2.55	2.45
Flexible Base, Light Brown.....				
Dark Elastic, Light Horn.....				
Red.....				
Orange.....	3.00	2.75	2.55	2.45
Black, Dark Horn.....				
Dark Brown.....				
Brown.....				
Improved Black, Jet Black.....	3.00	2.75	2.55	2.45
English Base, Medium Brown.....	4.50	4.05	3.95	3.95
Combination.....	4.00	3.60	3.35	3.10
Maroon.....				

SPECIAL—FOR TENDER GUMS, ETC.

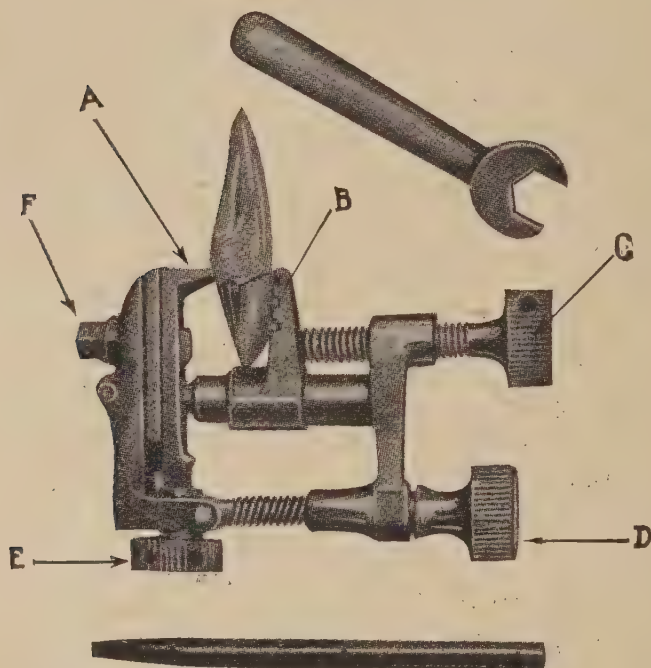
	Degrees Fahrenheit	Time H.	M.	
Soft Pink, for lining Palates.....	310	1	15	\$6.00
Soft Dark Red.....	310	1	15	4.00
Vela. for making Artificial Palates...	270	6	0	6.00
Brown Weighted.....				4.75
Pink Weighted.....				6.00
Brown Repairing.....				4.75
Pink Repairing.....				6.00

Cash discounts do not apply on quantity rates over 5-lb. lots; in other words, from 10-lb. to 20-lb. lots are cash prices.

Mosley Crown Remover

An Ideal Appliance for Removing
Crowns from Roots.

Registered.



Natural Size.

The Mosley Crown Remover is the only instrument yet devised for removing Dowel Crowns from the mouth. Its primary object is to remove these crowns without in any way injuring the root. This is accomplished quickly and painlessly. In most cases the crown remains uninjured and can be used again if desirable.

- A. Wedge Tongues.
- B. Vice Jaw.
- C. Thumb Screw.
- D. Thumb Screw.
- E. Thumb Screw.
- F. Jam Nut.

Complete directions with each Remover.

Price \$5.50.

Wax Models of Canines and Molars

About $\frac{1}{4}$ Natural Size of the Models.

HEALTHY CANINE



DISEASED CANINE



HEALTHY MOLAR



DISEASED MOLAR



A—Enamel. B—Dentine. C—Cementum. D—Pulp.

SUPPLIED ON STAND WITH GLASS COVER.

Healthy Canine.....\$4.00

Diseased Canine..... 4.75

Healthy Molar.....\$5.75

Diseased Molar..... 7.00

Aluminum Dentures

CAST WITH THE

Solbrig-Platschick Press

As testimony to the superiority of this appliance over other machines on the market to do this work, see the number of appliances left with us for sale by people who have immediately discarded them and purchased a

SOLBRIG-PLATSCHICK

on seeing it operated.

Write us requesting information regarding this "never out of order apparatus" and we will send you some interesting information about Dentures and Metals cast by Superheated Steam.

Better still, if you are in Toronto, come to our Depot and see it operated.

Spurge's Nitrous Oxide

With High Class Apparatus for Administering.

We have in response to different calls, put in stock a supply of Spurge's celebrated Gas and Cylinders.

These are best available and will give you comfort and satisfaction that others cannot.

WE HAVE ALSO PLACED IN STOCK

Weller's Nitrous Oxide and Oxygen Apparatus.

Weller's Regulator Stand with Foot Control.

The Celebrated No. 4 Nasal Apparatus, with Regulator Stand and Foot Control.

**These Appliances are the Finest Ever Shown
in Canada.**

If you are interested in Nitrous Oxide, it will pay you to inspect these goods or drop us a line asking for further information. It will be cheerfully supplied.

Fine Oil for
Dental
Instruments

OUR many years experience in the manufacture of FINE DENTAL APPLIANCES, enables us to tell just what is right in OIL for your Instruments. We have what you want and can confidently recommend you to use it.

Large Bottles in Neat Cardboard Box
15 Cents

What You Have So Often Asked For.

**A POPULAR TEMPORARY STOPPING
30 Cents a Box.**

It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50.**

SEND US AN ORDER NOW

Ash's Popular Stopping

Here's a good thing in Alloy

Ash's Popular Amalgam

Consequent to a steady demand for a lower priced Alloy than C. A. S. Amalgam, we have spent a great deal of time on the production of an Alloy that would be high in its proportion of silver, have great edge strength and hold its color in the mouth. We can confidently state now that we have what you have been looking for in

ASHS' POPULAR AMALGAM

\$1.00 Per Ounce

5 Ounces for \$4.50

Ask our travellers about it or better still, sit right down and send us a MAIL ORDER now. The price is certainly attractive and the guarantee of the oldest house in the world protects you.

SEND US YOUR ORDER

Extracts from Paper and Discussion on Silicate Cements.

Liverpool Odontological Society, Nov. 15, 1909.

Dr. Lewis Osborne stated: I have used silicate cements for four years and tried three makes, Harvidid, Ascher's and Schoenbeck's. In my hands the latter has proved by far the best in all respects.

Dr. Matthews stated: Had used all the three cements Mr. Osborne mentioned and he agreed that he had the best results from Schoenbeck's.

Dr. Edwards stated: Had had excellent results from Schoenbeck's; had also found it very good in repairing bridges, or where a porcelain front had broken off.

Dr. Harrison stated: He had used most of the silicate cements now on the market, but he had discarded them in agreement with other speakers for Schoenbeck's.

Dr. Steweni: Had had considerable experience with Schoenbeck's, and from laboratory tests and from clinical experience it seems to be by far the best on the market. Had met Dr. Schoenbeck in Berlin, who laid great stress on the proper way to mix the cement, as more care was required than with ordinary silicate cements or ordinary phosphate cements.

See Dental Record, January number, 1910.

Schoenbeck Silicate Cement

**The Nearest Approach to Nature's Enamel
Known to Dental Science**

This Cement has gained and maintains the foremost position of all Cement fillings.

SUPPLIED IN THE FOLLOWING SHADES

No. 1	Whitish	No. 8	Greenish Grey
2	White Yellow	9	Bluish White
3	Light Yellow	10	Brownish
4	Yellow	11	Pink Light
5	Dark Yellow	12	Pink Medium
6	Light Pearl Grey	13	Yellowish Grey
7	Pearl Grey	14	Brownish Grey
		15	Slate Bluish

PRICES

1 Color, Small	\$1.50	1 Color, Large	\$3.00
4 Color Packet	5.00	6 Color, Packet	7.50
1 Small Powder	1.00	1 Small Liquid	.50
1 Large Powder	2.00	1 Large Liquid	1.00

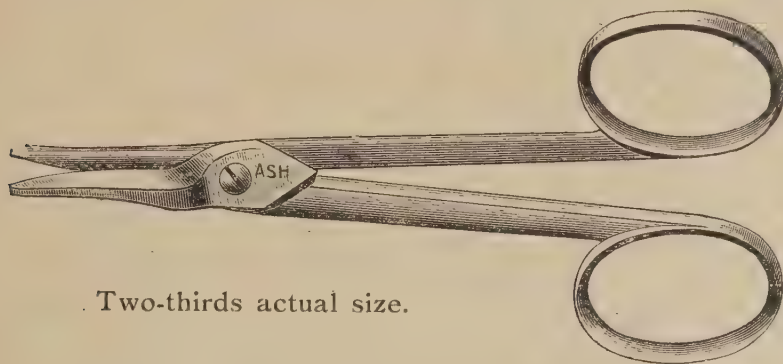
Pure Cocoa Butter.....Per Tube .20

Schoenbeck's Special Varnish.....Per Bottle .35

Universal Crown Scissors

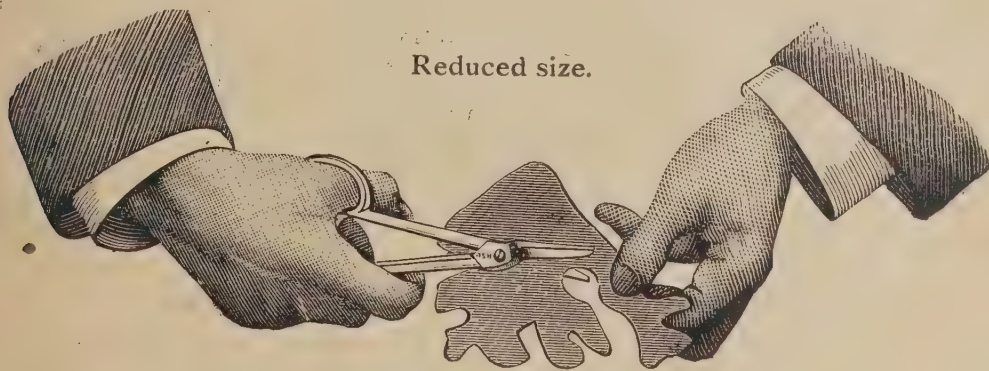
(Specially Tested)

The most useful form of Scissors on the market ; an invaluable tool for the Dental Laboratory, with which the same work can be done as with the ordinary right or left, straight or curved, Crown Scissors.



Two-thirds actual size.

The blades of the Universal Scissors are set at right angles to the handles and thus stand away from the work ; only the cutting edges come in contract with it ; the blades can therefore be freely turned in any desired direction without danger of bending or twisting, or tearing the metal ; hence straight, curved or angular cuts can be made with equal ease.

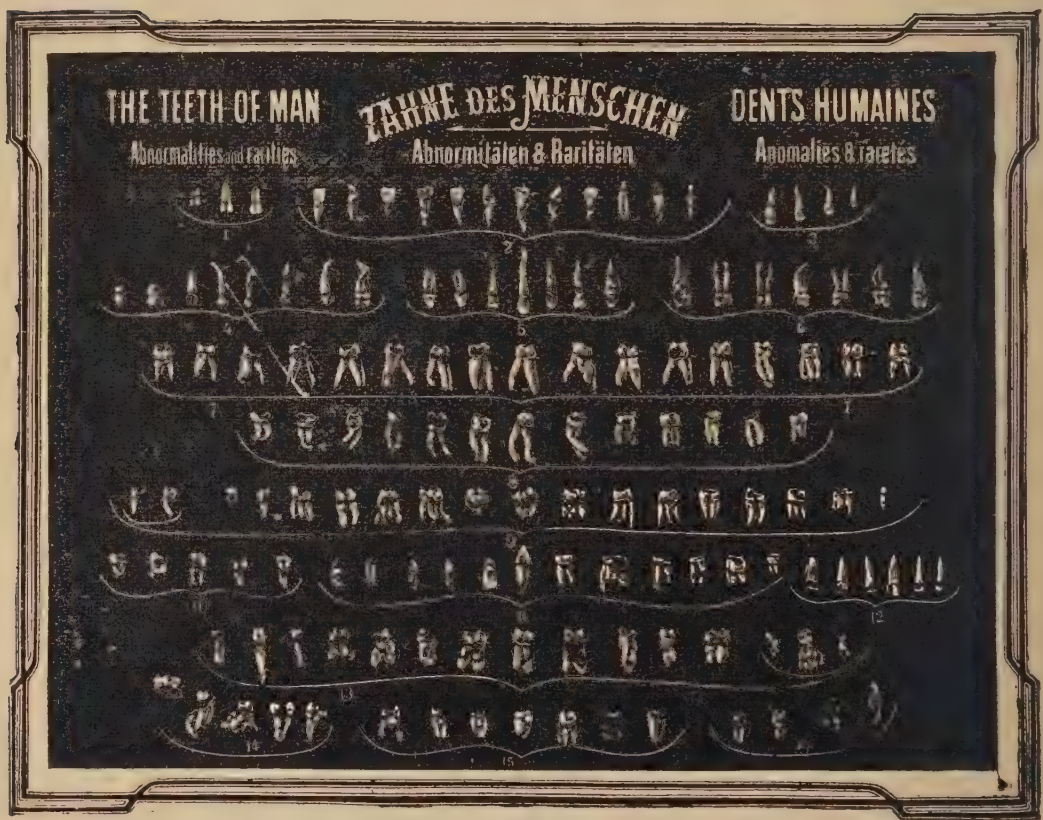


Reduced size.

Some idea of the wide range of usefulness of the Universal Scissors may be gathered from the accompanying reduced size illustration, which shows a number of various shaped cuts in a plate and how the body of the blade exposed to view stands away from the metal,

Universal Crown Scissors.....\$1 60

NEW EDITION
OF
WELLAUER'S CHART
OF
**Abnormalities of the
Human Teeth**



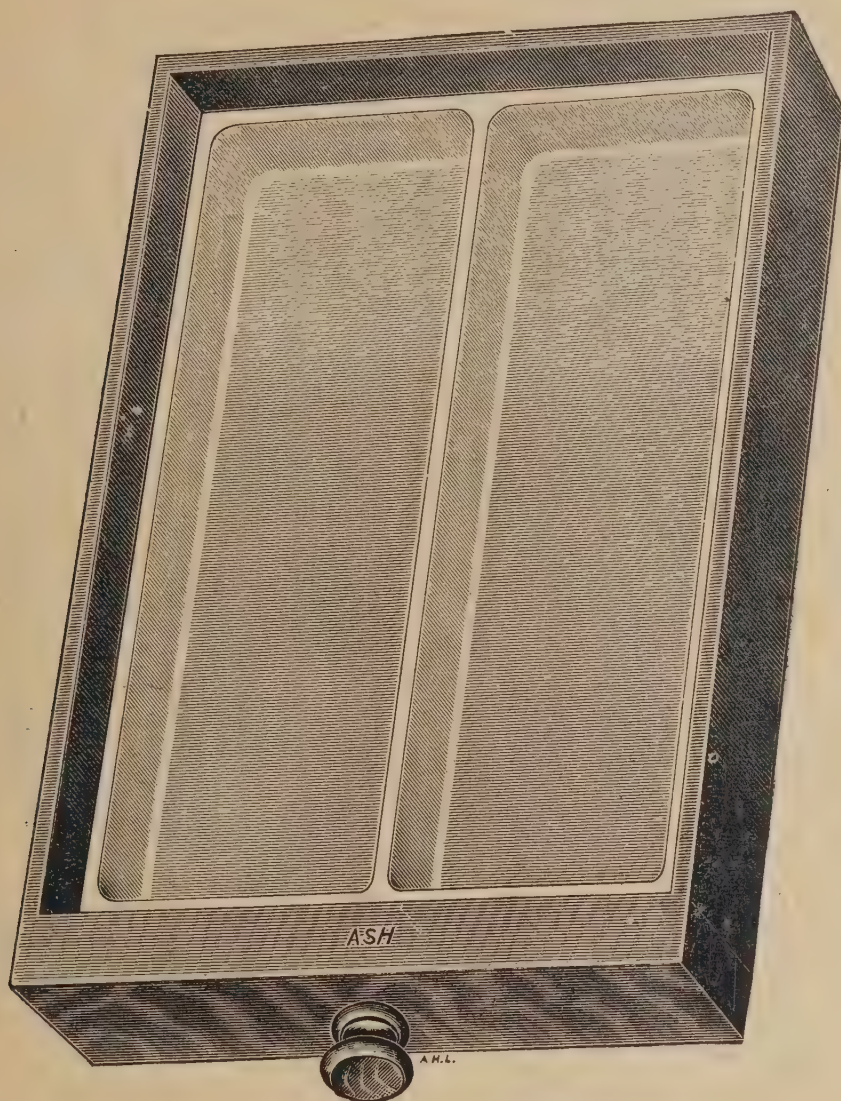
This illustration is about one-eighth of the natural size.

This Chart is beautifully lithographed, and consists of 143 figures exhibiting the various abnormalities of the teeth to be met with in dental practice, including:—Exposed tooth formations in the pulp cavity; Processes of resorption of the roots of teeth; Attrition of the crowns; Exostosis; Teeth with enamel nodules; Resorption of the roots of implanted teeth, etc., etc. Size, 28 inches by 24 inches.

Price.....net \$1 80

PORCELAIN TRAY

DIVIDED DOWN THE MIDDLE. FOR LONG-HANDLED INSTRUMENTS.



The two small sizes of Porcelain Trays for small instruments and useful sundries have been so favorably received by the Profession that we have decided to add the size here illustrated to our stock for long-handled instruments.

It is made to fit the drawer of Allan's Bracket Table, the outside dimensions being $7\frac{3}{4}$ in. long by $4\frac{3}{4}$ in. wide by $\frac{3}{4}$ in. deep, but it can be lifted out of the drawer if desired and used in any situation most convenient to the operator.

It is perfectly aseptic, and practically equal to new each time it is cleaned.

Price.....each 35c

PORCELAIN TRAYS

Porcelain Trays, each.....10c.



Drawer of Allan Table with six large and three small Porcelain Trays—
about half size.

ASH'S IMPERIAL GOLDS

Cylinders.....	$\frac{1}{8}$ oz.	\$ 4.00
Cylinders..	$\frac{1}{2}$ oz.	14.50

Foil

Plain Cohesive, No. 4.....	$\frac{1}{8}$ oz.	\$ 3.50
Plain Cohesive, No. 4.....	$\frac{1}{2}$ oz.	13.50
Corrugated	$\frac{1}{8}$ oz.	3.50
Corrugated	$\frac{1}{2}$ oz.	13.50

Ash's Imperial Gold Cylinders and Foil, though higher in price than most golds, are correspondingly higher in excellence of quality.

ASH'S GOLD SOLDERS

14 kt.....	per dwt. \$.65
16 kt.....	per dwt. .75
18 kt.....	per dwt. .85
20 kt.....	per dwt. .95
22 kt.....	per dwt. 1.05

In ordering quantities of 1 oz. cash with order ; 5c per dwt. is deducted from above prices.

Ash's Dental Alloy Wire and Plate

Wire, Square or Round, 2 dwt. pieces.....	\$1.75
Plate, per dwt.	.88

The wire is very rigid and is high enough fusing to allow of pure gold to be soldered to it.



ASH'S INLAY AND CROWN CEMENT GREATLY IMPROVED

(Oxyphosphate of Zinc)

Features—Extra Tenacious ; Extremely Dense ; Very Durable ; Non-Expanding ; Highly Resistant to the Fluids of the Mouth.

One of the wants experienced by the Inlay and Crown worker is a reliable and enduring cement, which can be depended upon to retain Inlays and Crowns in position for an indefinite time.

Ash's Inlay and Crown Cement meets the need, and possesses all the features enumerated above. The powder is very finely ground, it is easily mixed with the liquid, and forms a cement which practically does not expand during crystallisation. It is thus free from an objection which is present in most oxyphosphate cements that are used for setting Inlays and Crowns, viz., expanding during crystallisation, with the result that the bite is raised in the case of a Crown and the fit is disturbed in the case of an Inlay.

Directions for Use.

Put a small quantity of the Liquid on a clean glass slab, place enough Powder near it, but not in it, mix the two together by drawing a little Powder at a time into the Liquid with a spatula, until it is of the consistency of milk. In this condition it is suitable for setting an Inlay. (The Inlay should be smeared with a camel-hair pencil dipped in the Cement, and then the cavity should also be smeared so as to obtain the junction of cement with cement). For setting Crowns, the Cement should be mixed to the consistency of putty.

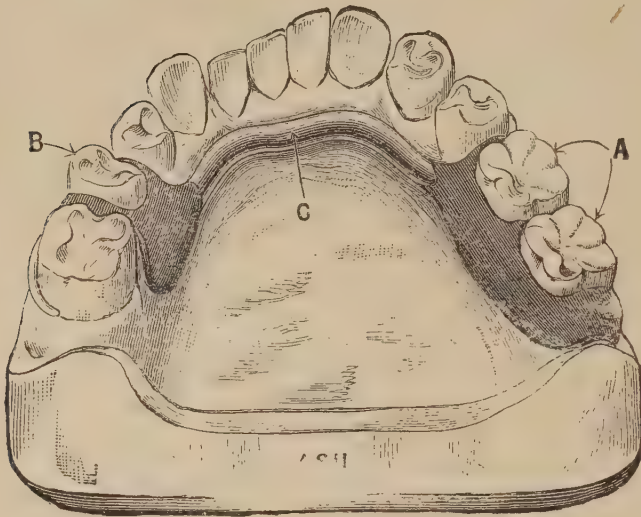
Supplied in the following shades :—

White, Pale Yellow, Yellow, Pearl Grey.

One-shade packet, any shade. ...per packet \$1.25 6 pks. for \$ 6.00

Four-shade packet.....per packet 3.00 6 pks. for 15.00

ASH'S OVAL GOLD CASED WIRE For Bar Lowers



Bar Lower Dentures have come into universal demand. Note some of their advantages.

No tendency to push teeth outwards.

Greater cleanliness.

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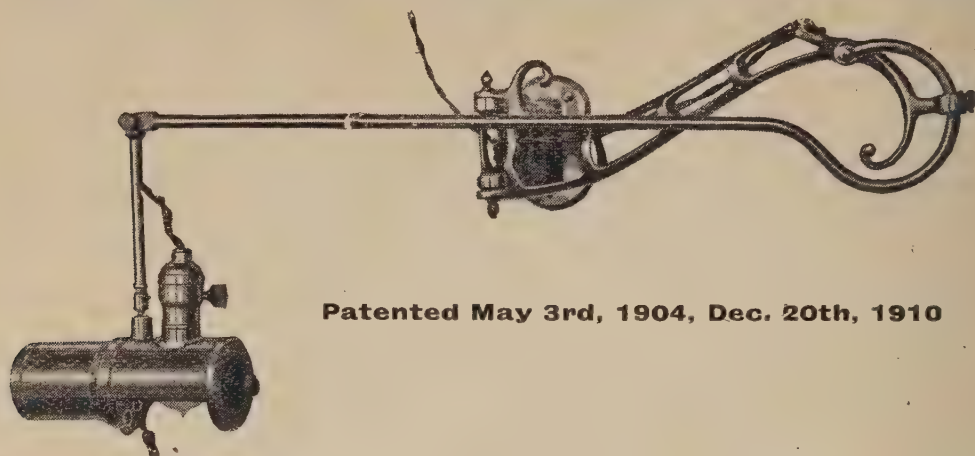
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It produces a light of sufficient power to clearly expose the remotest portion of the oral cavity—a light however of such mellowness that it is restful rather than trying to the eyes, and you may use it every day, and all the time without fear of injury.

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PRICE: Lewis Illuminator, any finish, including vertical arm, 6 feet silk cord and lamp \$15.00
No. 1 Ferro-nickle finish and 110 volt lamp furnished unless otherwise specified.
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Ash's Dowel Crowns

THE sale of these DETACHED POST CROWNS in Canada during the month of December has been phenomenal. Last month's output was more than double the November turnover, and we sold SOME Crowns in November.

Many Dentists are realizing what great advantage is gained by using ASH'S MOULDS.

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The average Detached Post Crowns cost you
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Just think of it—200 more Crowns at no
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Send us an ORDER NOW. An assortment of
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PRICES:	Single Crowns	.12
100	-	10.00
500	-	47.50
1000	-	90.00

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

FEBBUARY, 1911

No. 5

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Certificates of Illness.

Vulcanite Dentures.

Second-Hand Goods.

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New Goods and Novelties.

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**It is the Best Low Priced
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**\$1.00 Per Ounce
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Consequent to the further advance in the cost of Platinum, the following Prices on Teeth of our manufacture will take effect from February 1st, 1911.

	Single	100 Teeth	500 Teeth	1000 Teeth
Flat Teeth	.25	.22	21.50	20.50
Plain Vulcanite	.20	.17 1/2	.17	.16
Diatoric Teeth	.04		.3 3/4	.3 1/2
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Lining.....	.12			
Detached Post Crowns	.12	.10	.9 1/2	.9
Dental Alloy Pins, Single ..	.25			
Dental Alloy Pins, Double....	.35			
Base Metal Roughened Pin.	.05			

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I

Ash's Canadian Monthly Circular

VOL. I.

TORONTO, FEBRUARY 1, 1911

No. 5

SHOULD DENTISTS CERTIFICATES OF ABSENCE BE ACCEPTED BY SCHOOL BOARDS?

A movement is on foot to have an ordinance passed, giving the Dental Surgeon the authority to issue a Certificate of Absence from duty of a Public School Teacher, that must be accepted by a School Board. Many years ago when Dentistry as it was then known, was not practised by properly qualified men, and the great majority of people had no dentistry done whatever, the standing of the then dentist did not entitle him to a position akin to the Physician.

To-day the situation is altered and dentistry is a "Healing Art." If a School Teacher is suffering from an abscessed tooth producing much pain and discomfort, as well as a general condition that is prohibitive of attention to ones usual work, the case is not one for a physician, and the Teacher should not be put to the expense of needlessly consulting a medical man, who possibly would not know what the trouble actually was, but whose signature is necessary to save the patient from shortage in pay.

The Dentist is licenced by the proper authorities to diagnose and treat all cases of disease in the oral cavity, and therefore should rightly be the judge of a patients inability to perform his or her usual avocations in such cases as come under his hands. Different large corporations such as two lines of railways operating in Canada, accept such a certificate from a licentiate of the Royal College of Dental Surgeons of Ontario, and every other sane corporation should do the same. It behooves every Dentist in each and every part of Canada to use his influence to ensure the passage of such legislation not only for the benefit of the public,

but as a distinct step in advance in the standing of dentistry, and placing it in so far as its field of usefulness goes, on a par with medicine. The time will surely come when the world will see that the improving of the health physique, and stamina of the human race is achieved largely through proper attention to the oral cavity—the gateway of the human system. F. N.

VULCANITE DENTURES.

Clinical Lecture br Mr. W. A. Maggs.

Vulcanite being the material most commonly used in the construction of dentures, no apology is needed for bringing the subject before you. The base-plate of a vulcanized upper denture should invariably be made of tin, either swaged or "struck up." The old method of using wax for a base-plate should no longer be adopted; first, because a uniform thickness of vulcanite cannot be guaranteed—the strength of a plate is represented by its weakest point; and, secondly, because the rugae cannot be properly reproduced.

The denture of former days, with its thick, smooth, and highly polished lingual surface, is not to be compared for utility or comfort with the denture of to-day, with its uniform thickness, and its ridges corresponding to the rugae of the palate. Formerly gold was more frequently preferred to vulcanite for a plate, chiefly, I think, because the gold was struck-up to shape; but now that vulcanite dentures can be similarly constructed, they are far more acceptable to the patients than gold, because they are lighter in weight and more adapted to suction.

The rugae, I need hardly say, are tranverse folds of the mucous membrane of the palate, which serve a useful purpose in the disintegration of food, the tongue forcing and rasping the food against their rough surfaces. The Plaster of Paris model should be reproduced in zinc, and the counter-die in lead, as if dealing with a metal plate. The tin base-plate whether of one, or two, or three thicknesses, should correspond in all to about No. 19 guage, and should be swaged in the "Differential Press," or "struck up." A polishing plate should invariably be used, and is best made by carefully burnishing tinfoil over the swaged base-plate, the result after vulcanization being a well polished denture. The maximum amount of suction is obtained by carrying the vulcanite as far back

as possible on the hard palate. There is no fear of impinging upon the soft palate, and thereby defeating the end in view by the plate being dislodged during deglutition or speaking. The practical way of testing the matter is to place the denture in position in the mouth, and look at the soft palate while the patient is talking; it will be seen that the distal margin of the denture is invariably well in front of the soft palate. It often happens that want of suction is due to the vulcanite plate having been too short; therefore it is the safest course in every case to carry the vulcanite well backwards, and to cut it away if it is not comfortably tolerated or causes nausea. In my early days of practice, small plates—so dear to lady patients—seemed to me to be the ideal, but later their instability and the danger of their being swallowed caused me to discard them; I also found that they required bands, whereas large plates do not; and, further, that with large plates the resonance of the voice is improved, as has been verified by the statements of patients who are singers or public speakers. The use of bands, and still more the use of wires, should whenever possible be avoided, for as everyone knows clasps of every description cause decay by harbouring decomposing food and by friction.

Bands may be needed in dentures for patients whose remaining natural teeth are loose, and also in the case of those who resort to dentures late in life.

Bands are more frequently required in a lower denture than in an upper, on account of the action of the tongue, which tends to dislodge a lower plate. It is my custom to use perforated gold plate, dental gauge No. 5, in upper vulcanite dentures (excepting in some full plates, in which thick vulcanite extends around the labial surfaces,) struck-up and embedded in the vulcanite, so that it neither shows on the palatal nor in the lingual surface of the finished denture. The perforated gold, whilst it adds materially to the toughness of a plate, does not thicken it, but in the combination the advantages of the suction of a vulcanite and much of the strength of a gold plate are secured. The perforated gold should always be carried over the alveolar ridge, because it is here that the strain is greatest.

A lower vulcanite denture, should be strengthened by having a flattened and roughened gold wire embedded in it, and if bands be necessary they should be soldered to the wire. Provided the ridge of an edentulous mandible be large and round, and protected by thick gum, the denture should be lined with gold plate, and the vulcanite attached to it by means of retaining "tags."

A sharp ridge of bone with a thin mucous membrane contraindicate a gold lining, as the gold cannot be eased so freely as vulcanite.

A full upper denture should extend over the tuberosities on both halves of the maxilla; suction is thereby increased, and the forward movement of the plate prevented. The vulcanite should be cut away at the point of insertion of the buccinator muscle, which corresponds on each side to the site of the first permanent molar, and at the middle line in front, corresponding to the fold of mucous membrane of the lip known as the "fraenum."

A full lower denture should extend well down on both sides at the posterior lingual service—often called by mechanics, for some inscrutable reason, "the heel"—because the plate is unaffected by muscular action at this point, and, as in an upper denture, it should be cut away for the buccinator muscles and the fraenum.

A good practical way of determining whether a lower plate is too deep is to pull upwards the lip and cheek of the patient, and should any muscle move the denture it is an indication that the plate is too low at that place.

When suction fails with the ordinary plate, the use of the "Fulsome ridge" is advocated. This ridge is made by cutting a groove on each side of the palatal surface of the plaster model, about one-third of an inch from the alveolar border—the thickest part of the mucous membrane—and another groove at the distal surface of the palate. The vulcanite runs into these artificial grooves and the suction is thereby improved.

A better plan, in my opinion, is to make use of what is known as a "suction plate," which is made of aluminum, dental alloy, or gold, in various shapes and patterns. Such a plate is worn on the finished denture in contact with the palate. I have found the "cup suction plate" most successful in difficult cases, such as flat palates with thin mucous membrane and in underhung bites, the cohesion being much improved, and in many cases being entirely satisfactory.

I am not an advocate of rubber suction discs. They are troublesome in that frequent renewal is necessary, and sooner or later cause discomfort and inflammation. They give stability to a new denture, but the same may be said of powdered gum tragacanth, and a closely fitting upper denture with vulcanite around the labial surface really acts as a "sucker."

"Gum sections" are admirably adopted for full dentures, and if the sections are closely fitted a natural appearance is produced,

which is pleasing to the eye. Their chief charm, I think, consists in the spacing which exists in all "gum sections," and if more care were exercised in this respect in the construction of vulcanite dentures, such dentures, well polished, could be made to look equally pleasing. In speaking of spacing artificial teeth I may say that the centrals should not be spaced, otherwise there is a likelihood of hissing in speaking, but the other teeth should be set slightly apart, and not in juxtaposition, like the arrangement of pianoforte keys, as is too often seen.

Other points in the arrangement of the teeth are these: the posterior upper molars on both sides should be on a higher level than the other teeth, and artificial teeth should always be placed above the mid-alveolar ridges, and not outside them. In elderly persons who have been long edentulous the jaw-bones become much wasted, the consequence being that the superior surface of the mandible is very flat, having little or no ridge of bone. In such cases it is difficult for a lower denture to be kept in position during eating and drinking, and a weighted plate is a great help. To make such a plate a suitable bar of solid tin is embedded in the vulcanite, care being taken that the metal does not impinge upon the base of the vulcanite, where it might be badly tolerated, or on the labial surface, where it would be unsightly. The extra weight is occasionally objected to, but the chief disadvantage is the liability to breakage, should the denture fall out of the hands of the patient.

Spiral springs may be adopted as a last resource, should a weighted lower be unsatisfactory. Whilst not advocating springs unless necessary, I consider they are often undeservedly condemned, for they prevent dislodgement of the plates, and make speaking and eating easy and comfortable. It is true that food collects around the springs, that they wear out in the course of one or two years, and that they may be broken, usually from kinking in putting the dentures in the mouth, but their use for aged persons adds so much to the stability of the dentures as to outweigh by far their disadvantages. The proper position of the screws for the springs is important. They should be placed in the lower denture between the second premolar and the first molar, and slightly anterior to this position in the upper denture. The swivels should be parallel to each other when the dentures are articulated. Gold washers should be used, and in lower plates the washers should be turned up posteriorly for the purpose of making a stop for preventing the springs working downwards and cutting into the mucous membrane of the jaw. It is well not to use longer springs than are necessary,

for not only is their strength thereby diminished, but the mucous membrane of the cheek is liable to be cut, and much pain and discomfort caused. It is easy to determine the right length of springs by seeing that they are slightly flexed posteriorly, when the dentures are in position and the mouth is open to its full extent.

To summarise, I would reiterate and emphasise the following points :—

That swaged or "struck-up" base-plates and polishing plates are essential for upper dentures.

That the vulcanite should cover tuberosities of the jaw, and as much of the hard palate as the patient can tolerate.

That clasps of all kinds should as far as possible be avoided.

That the "Fulsome ridge," the "cup suction plate," the weighted lower denture, and spiral springs have their uses.

FOR SALE—Dental Practice in Toronto. Best locality. Up-to-date outfit. Apply Ash & Sons, Toronto.

WANTED—Operators for Ontario and Manitoba offices. Apply Ash & Sons, Toronto.

Ash's Dowel Crowns

The following pages, which show some of our moulds of Ash's Detached Post Crowns are well worth close examination and study. The illustrations will be valuable as a reference and guide in ordering by mail. Keep these illustrations in a convenient place, as, of course, you will become a user of them when you are conversant with their superiority over any of the existing dowel crowns.

The price, too, is a great consideration—make a note of it—

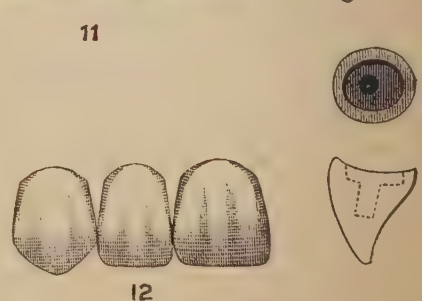
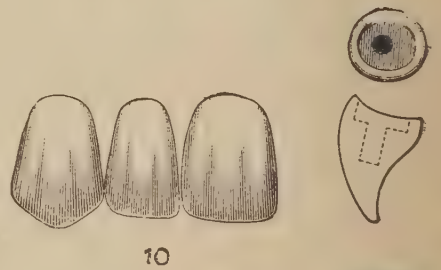
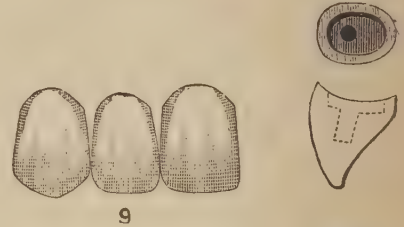
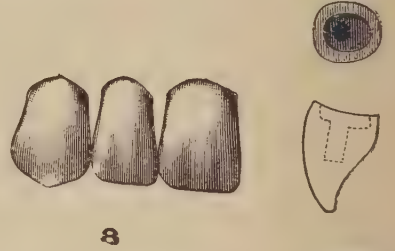
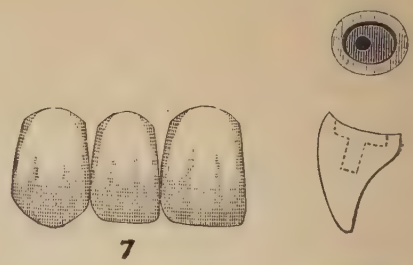
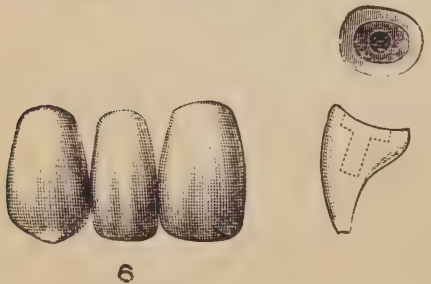
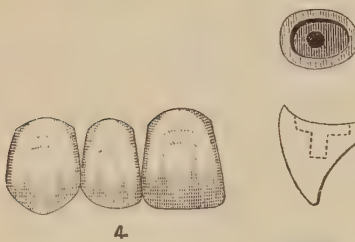
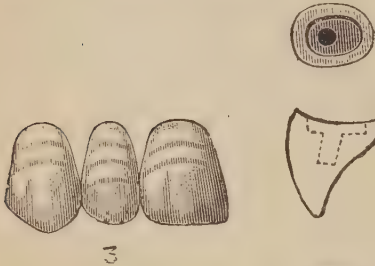
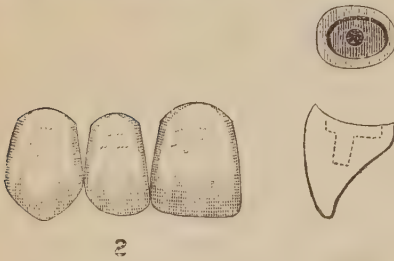
12 cents each.

\$10.00 per hundred.

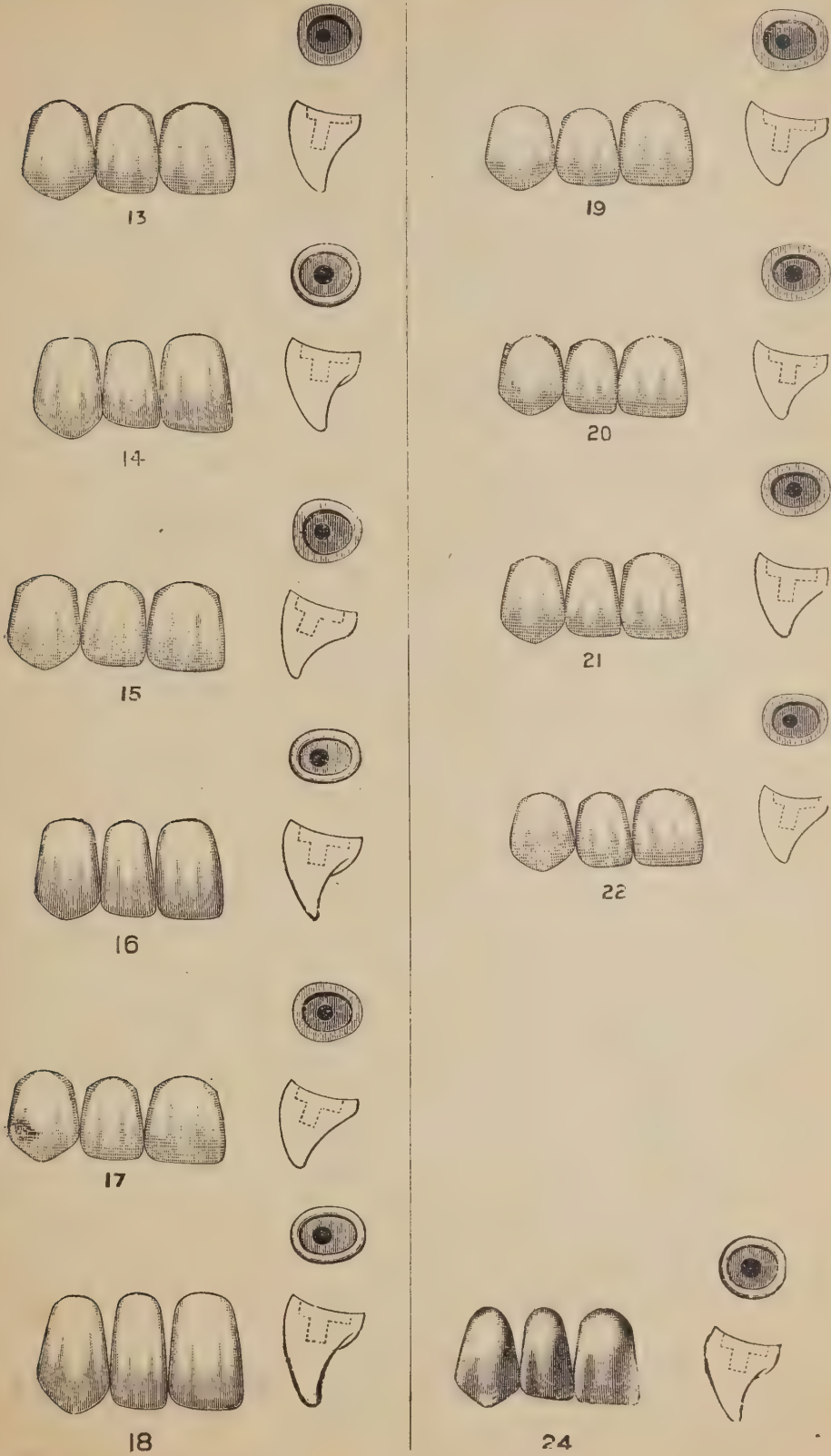
Outside of the recognized value they have, as being made of our celebrated mineral, positively the only body that can be successfully polished after grinding, the moulds are the most serviceable. Notice in the Anterior and Bicuspid teeth, the provision for roots that are large bucco-lingually.

Note also the recess in the crown that takes the posts. It is etched in each and every crown, assuring you of perfect cementation. We are also making now the labial aspect of our crowns much longer than shown in the illustrations. This improvement is obvious.

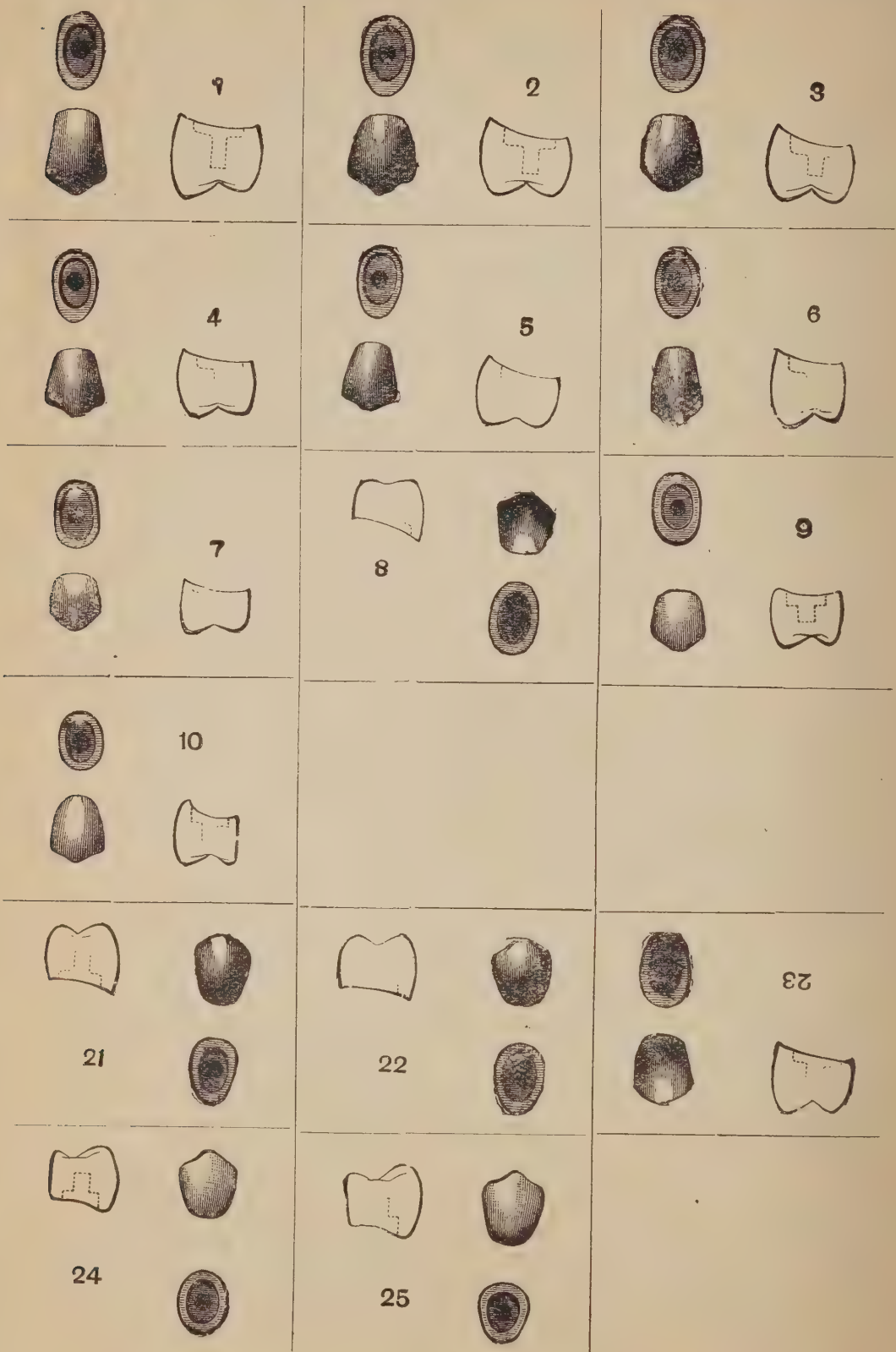
ASH'S DOWEL CROWN'S—UPPERS



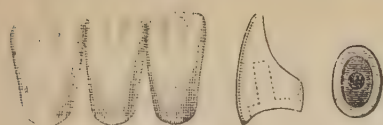
ASH'S DOWEL CROWNS—UPPERS



ASH'S DOWEL CROWNS—BICUPSIDS



ASH'S DOWEL CROWNS—LOWER



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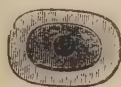
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8



3



6



9

Stent's Composition

Attempts have been made to imitate Stent's Compound; even the color of the Container, and the label have been copied, for the purpose of deceiving the unwary. Every cake of the **Original Genuine** Stent's Composition bears the Trade Mark, which consists of the single word

STENT'S

Without Initials of any kind and the outlines of two **Impression Trays**, as shown below, also the label on every box bears this signature:

C. A. & S. Stent.

Sole owners of the original formula—

CLAUDIUS ASH, SONS & CO., Limited

Note the Canadian price:

50 Cents per Box
10 Lbs. for \$9.00

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The Nearest Approach to Nature's Enamel Known to Dental Science

The illustrations on the next pages showing work done by DR. MCALPIN, together with Society reports, criticisms, test reports, instruction and other general information regarding "SCHOENBECK'S CEMENT" are of surpassing interest to the Dental Profession.

This Cement has gained and maintains the foremost position of all Cement fillings.

SUPPLIED IN THE FOLLOWING SHADES

No. 1	Whitish	No. 8	Greenish Grey
2	White Yellow	9	Bluish White
3	Light Yellow	10	Brownish
4	Yellow	11	Pink Light
5	Dark Yellow	12	Pink Medium
6	Light Pearl Grey	13	Yellowish Grey
7	Pearl Grey	14	Brownish Grey
15		Slate Bluish	

PRICES

1 Color, Small	\$1.50	1 Color, Large	\$3.00
4 Color Packet	5.50	6 Color, Packet	8.00
1 Small Powder	1.00	1 Small Liquid	.50
1 Large Powder	2.00	1 Large Liquid	1.00

Pure Cocoa Butter.....Per Tube .20

Schoenbeck's Special Varnish.....Per Bottle .35

Reproduction of Restorations made by DR. A. McALPIN,
Bradford, Pa. with "SCHOENBECK CEMENT."



Extracts from Paper and Discussion on Silicate Cements.**Liverpool Odontological Society, Nov. 15, 1909.**

Dr. Lewis Osborne stated: I have used silicate cements for four years and tried three makes, Harvidid, Ascher's and Schoenbeck's. In my hands the latter has proved by far the best in all respects.

Dr. Matthews stated: Had used all the three cements Mr. Osborne mentioned and he agreed that he had the best results from Schoenbeck's.

Dr. Edwards stated: Had had excellent results from Schoenbeck's; had also found it very good in repairing bridges, or where a porcelain front had broken off.

Dr. Harrison stated: He had used most of the silicate cements now on the market, but he had discarded them in agreement with other speakers for Schoenbeck's.

Dr. Steweni: Had had considerable experience with Schoenbeck's, and from laboratory tests and from clinical experience it seems to be by far the best on the market. Had met Dr. Schoenbeck in Berlin, who laid great stress on the proper way to mix the cement, as more care was required than with ordinary silicate cements or ordinary phosphate cements.

See Dental Record, January number, 1910.

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Aluminum Dentures use

Solbrig's Embedding Material

The great amount of research work done by M. O. SOLBRIG, L.D.S. of Paris, has among other valuable results, given us the ideal in Investments. In the Embedding of large cases the most frequent cause of failure is through inability to properly surround the model, feeling certain that no air bubbles exist. Solbrig Embedding Material is mixed and poured like cream, giving absolute certainty of perfectly surrounding the model. The total absence of shrinking and cracking will delight you. It is a very open porous material, and allows a free escape of air from the mould.

Tin containing 7 lbs - 80 Cents

Tin containing 28 lbs. - \$2.50

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Examined the quality of your cast inlays, bridges, or cast Aluminum dentures when made by any other method than super-heated steam?

We would like the opportunity to demonstrate this important point to you.

The Solbrig-Platschik Press

Gives you cast gold and Aluminum of exactly the same texture as the beaten metal. No Brittleness. No pitting of Aluminum.

Write us for information; it will cheerfully be given.

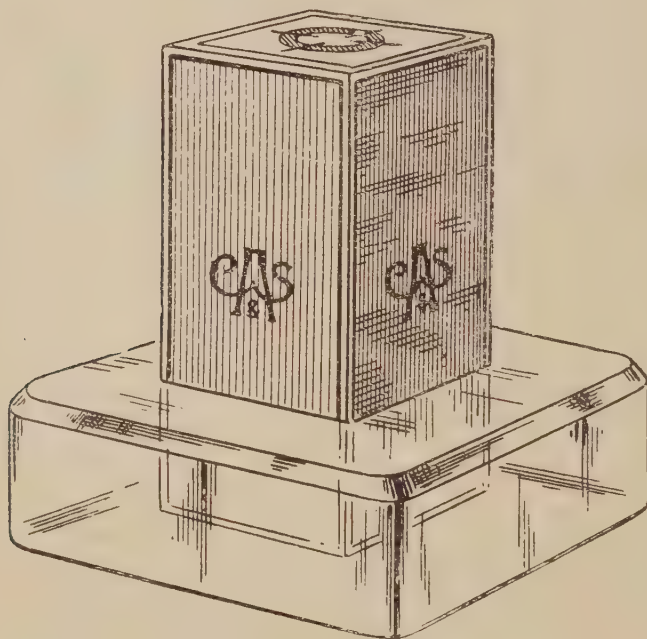
Ash's Aluminum Alloy

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Price Per Packet 65 Cents

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1 Columbia Chair, Almost New	80 00
1 Harvard Chair, Good Condition	70 00

WE INVITE SPECIAL DEPOSIT ACCOUNTS.

A cash deposit of \$100.00 to apply to general merchandise, entitles the sender to a discount of \$11.11.

A cash deposit of \$50.00 entitles the sender to a discount of \$2.50.

A cash deposit of \$25.00 entitles the sender to a discount of \$1.25.

Why not send us a deposit NOW.

WHILE we have always had the largest sale of DENTAL RUBBERS in Canada, the demand during the past few months has been much greater than usual, and the Canadian stock has been at times about depleted. In looking about for a reason for the largely increased sale, it is traceable to the fact that not only has the high standard of quality been kept up, but also to the fact that some Dentists who were formerly using other makes of Rubbers, find, that box for box, ASH'S have more rubber in them, and less linen. The saving that goes direct into the Dentist's pocket by using ASH'S RUBBERS is considerable, and besides there is great satisfaction in using the

BEST IN THE WORLD.

THE question has often been asked us, "Why are ASH'S RUBBERS more different to pack than some other makes?"

We like to hear that question when the answer will be listened to.

Any honest manufacturer of Dental Rubber will tell you the **Purer the Rubber, the harder it is to pack.** The Dentist is of all professional men, the most exact and the most thorough and painstaking in his efforts to improve the quality of his handiwork, be it a Gold Filling or a Vulcanite Denture. In the case of the Gold Filling, the cheapest or the easiest manipulated gold he well knows is not always the best. In the case of the Vulcanite Denture, the great majority of the Dentists the world over, know that ASH'S RUBBERS make the strongest and best Dentures.

If you are not at present a user of ASH'S RUBBERS begin now:

They will cost you less than many of the inferior brands.

For prices and quantity rates see next page.

Ash's Dental Rubbers

UNAPPROACHED FOR
Excellency, Purity, Strength, Elasticity
and Density.

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



in addition to the name of the Rubber.

Always ask for ASH'S when ordering Dental Rubbers.

For full list of our Dental Rubbers showing NEW and REDUCED prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we give full **16 OUNCES** of Rubber TO THE POUND, exclusive of the linen backing. We have also stated that MOST American manufacturers DO NOT give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?

Ash's Dental Rubbers

Consequent to the easing of the market on Pure Para, we are pleased to be able to announce the following reduced scale of prices on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.50	\$5.00	\$4.75
No. IX Pink, Medium.....				
No. I Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....	5.00	4.50	4.25	4.00
No. 2X Pink, Medium.....				
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

S. P. Deep Pink.....	\$4.50	\$4.05	\$3.95	\$3.95
White, for Side Blocks, etc., Bone...				
Child's G., Bright Red.....				
A. E. Elastic, Dark Brown.....				
W. Elastic, Dark Brown.....	4.00	3.60	3.35	3.10
Whalebone No. 1, Dark Brown.....				
Whalebone No. 2, Light Brown.....				
Solid Base, Pink Brown.....				
Dark Red.....	3.00	2.75	2.55	2.45
Flexible Base, Light Brown.....				
Dark Elastic, Light Horn.....				
Red.....				
Orange.....	3.00	2.75	2.55	2.45
Black, Dark Horn.....				
Dark Brown.....				
Brown.....				
Improved Black, Jet Black.....	3.00	2.75	2.55	2.45
English Base, Medium Brown.....				
Combination.....				
Maroon.....				
	4.00	3.60	3.35	3.10

SPEICAL—FOR TENDER GUMS, ETC.

	Degrees Fahrenheit	H.	Time M.	
Soft Pink, for lining Palates.....	310	I	15	\$6.00
Soft Dark Red.....	310	I	15	4.00
Vela. for making Artificial Palates...	270	6	0	6.00
Brown Weighted.....				4.75
Pink Weighted.....				6.00
Brown Repairing.....				4.75
Pink Repairing.....				6.00

Cash discounts do not apply on quantity rates over 5-lb. lots; in other words, from 10-lb. to 20-lb. lots are cash prices.

Ash's First Quality Engine Burs

We carry in Toronto a large stock of these burs which are made of the best steel available. They are all British made on the most approved Bur machines known. They are attractively done up with a mica window to each package.

Note the prices. They have never been equalled by

HIGH QUALITY BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. These burs are of the highest quality, scientifically made and are as low priced as is consistent with ASH quality.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.91	\$.83
Rounds.	8 to 11	1.25	1.17	1.08
Wheels.	11 1/2 to 18	1.00	.91	.83
Wheels.	19 to 22	1.25	1.17	1.08
Inverted Cones.	33 1/2 to 40	1.00	.91	.83
Inverted Cones.	41 to 44	1.25	1.17	1.08
All Fissures.		1.00	.91	.83

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

ASH CROSS-CUT BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. The most rapid-cutting Burs obtainable.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.91	\$.83
Rounds.	8 to 11	1.25	1.17	1.08
Wheels.	11 1/2 to 18	1.00	.91	.83
Wheels.	19 to 22	1.25	1.17	1.08
Inverted Cones.	33 1/2 to 40	1.00	.91	.83
Inverted Cones.	41 to 44	1.25	1.17	1.08
All Fissures.		1.00	.91	.83

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

Wax Models of Canines and Molars

About $\frac{1}{4}$ Natural Size of the Models.

HEALTHY CANINE



DISEASED CANINE



HEALTHY MOLAR



DISEASED MOLAR



A—Enamel. B—Dentine. C—Cementum. D—Pulp.

SUPPLIED ON STAND WITH GLASS COVER.

Healthy Canine.....\$4.00

Diseased Canine..... 4.75

Healthy Molar.....\$5.75

Diseased Molar..... 7.00

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**A POPULAR TEMPORARY STOPPING
30 Cents a Box.**

It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50.**

SEND US AN ORDER NOW

Ash's Popular Stopping

Here's a good thing in Alloy

Ash's Popular Amalgam

Consequent to a steady demand for a lower priced Alloy than C. A. S. Amalgam, we have spent a great deal of time on the production of an Alloy that would be high in its proportion of silver, have great edge strength and hold its color in the mouth. We can confidently state now that we have what you have been looking for in

ASH'S POPULAR AMALGAM

\$1.00 Per Ounce

5 Ounces for \$4.50

Ask our travellers about it or better still, sit right down and send us a MAIL ORDER now. The price is certainly attractive and the guarantee of the oldest house in the world protects you.

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A Popular Priced Wax

IS IN GREAT DEMAND

The large sale for our ENGLISH WAXES bears testimony to their great value.

No. 3, Pink	per lb.	.65
“ 2, “	“	.75
“ 1, “	“	.80
Brown for Base	“	.80
Extra Tough Pink	“	1.00
“ “ “	“	1.25
“ “ Yellow.....	“	1.00
Black for Inlays in fine sticks, per box		.35

Send us that MAIL ORDER, or ask one of our many travellers to supply you.

OUR PYORRHEA CLINICS

prove that "Dentinol" and "Pyorrhocide" used in conjunction with scaling produce results in the treatment of Pyorrhea, Gingivitis, spongy and bleeding gums that are **UNEQUALLED**.

WE TREAT CASES PRESENTED BY DENTISTS ONLY and COMPLETE CASES without expense to Dentist or Patient. Our Clinics are open to ALL DENTISTS during ALL TREATMENTS. That old notion about "patients not wanting to pay for treatment," is knocked sky high when you show them RESULTS. Rich and poor alike are wonderfully appreciative.

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The Improved Dentinol Pyorrhea Scalers

(Set of 12) \$9.00.

By the use of which the removal of all deposits is simplified. Full directions for using each instrument enclosed.

The Dentinol Perfect Syringe

Ground glass barrel and plunger (no packings) flat tipped platinum iridium point.

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2 oz. bottle (Flooded into pocket with syringe). \$1.00

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4 oz. can (used by patient as a Dentifrice) \$9.00 per doz.

Pyorrhocide is a powerful antiseptic, medicated, prophylactic Dentifrice and is the best for GENERAL USE in that the use of it maintains hygienic conditions in the oral cavity, thoroughly cleans the teeth, and PREVENTS PYORRHEA.

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DR. MATHIESON'S NEW ANAESTHETIC

Antiseptic

LOCAL ANAESTHETIC FOR PAINLESS EXTRACTION OF TEETH AND MINOR SURGERY

It contains no Cocaine

It is carefully manufactured and will not deteriorate

Its ingredients are thoroughly sterilised

It causes no sloughing or ill effects

Its ingredients are labelled on each bottle

Through use by many Dentists this Anaesthetic is well known, safe and satisfactory. You find it can be relied on for POWER and prompt ANAESTHESIA. NO FAILURES. Freedom from TOXICITY and IRRITANT effects.

For \$1.00

We will send you one THREE ounce bottle as a large sample to make a test that will satisfy in regard to what we claim.

1 Ounce.....	\$.75
3 Ounce.....	2.00
12 Ounce.....	6.00

CLAUDIUS ASH, SONS & CO., Limited

13 GRENVILLE STREET, TORONTO

CHARLES L. DALY

The X. L. C. R. Dental Laboratory

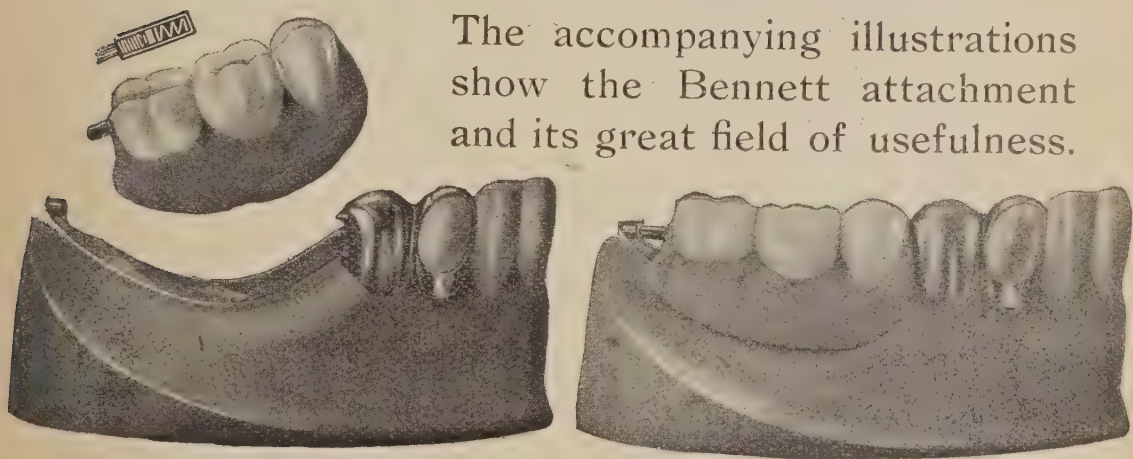
Since Mr. Daly has returned from New York he is prepared to execute with the greatest satisfaction some of the more difficult classes of work in the field of Mechanical Dentistry. In addition to standard work he has specialized in

Continuous Gum Work

and

Bennett's Removable Bridges

The accompanying illustrations show the Bennett attachment and its great field of usefulness.



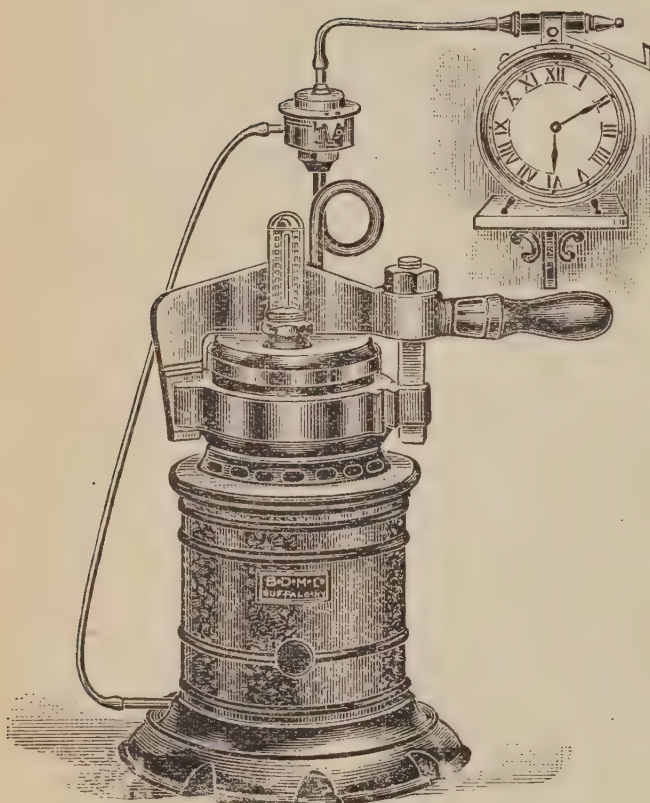
Send us your next order—It will be promptly and carefully executed.

Our New Price List is in the hands of the printer and will be ready for distribution in a few days. A request postal will bring you a copy.

X.L.C.R. DENTAL LABORATORY

2 College Street, Toronto

DON'T TAKE CHANCES



The life of a Vulcanizer may be four years, or forty, according to care or use. Yours should be closely watched, and if corrosion and natural wear appear to have weakened it, a new "LEWIS" \$15.00; \$18.00 or \$20.00 according to size, will prove a good investment. Don't take chances on a steam boiler carrying a pressure of 100 lbs. to the square inch, but keep it always in prime condition.

The "LEWIS" has unbreakable cap and bar, and a solid drawn copper boiler. In operation it is simplicity

itself. The cut shows it equipped with Gas and Time Regulator, adding \$8.50 to the price.

Ask for Catalogue "C" telling all about Vulcanizers.

BUFFALO DENTAL MANUFACTURING CO.
BUFFALO, N.Y., U.S.A.

Thorough Cavity Preparation is made possible by the use of **Realization Burs**

Realization Burs cut so quickly and quietly that with them you can make the most extended and thorough excavations without fatiguing the patient and without exhausting yourself. They are a boon to a dentist with fidgety, hypersensitive patients.

Because **Realization Burs** shave dentin without grinding or chattering, they are easier on the patient. The blades of **Realization Burs** are all of uniform length and angle.

Realization Burs are made by machine of a special steel, highly tempered, insuring smooth cutting edges which hold their razor keenness in the hardest cutting.

Realization Burs do not become heated nor cause discomfort to the patient. A small **Realization Bur**, operated at a high speed, will prove a most satisfactory obtunder of sensitive dentin.

Sold by all dental depots at

\$ 1.00 per dozen
5.50 per half gross
10.00 per gross

CONSOLIDATED  DENTAL MFG. CO.

NEW YORK
BOSTON

CHICAGO
DETROIT

PHILADELPHIA
CLEVELAND

Ash's Dowel Crowns

IN our December and January issues we told of the very large sales of these POPULAR TEETH. We are pleased that we can truthfully say that our sales for these in January exceeded the months of November and December put together. In addition to the dozens of Mail Orders for odd selections in one day, we received in one working day 8 quantity orders for these Crowns.

If you have not figured out this Crown proposition, **Do it now!**

See our Description and Price List of these Crowns on Pages 7 to 11 of this issue, and note well that we give you

**300 Crowns for the Price
others charge for 100.**

**We would like your Trial Order for 100 of
these Crowns in Neat Box \$10.00.**

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

MARCH, 1911

No. 6

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CLAUDIUS ASH, SONS & CO., Limited

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ST. PETERSBURG, 21 Gogolstr
MOSCOW, Kusnetzki Pereulok, 3
NEW YORK, 30 East Fourteenth St,
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CAIRO, 4 Taher Street, Opera Square

BRESLAU, Gartenstrasse, 22

WHEN WE PLACED ON THE MARKET

Ash's Popular Alloy

We knew there would be a large demand for it. The first month's sale has been far and away beyond our expectations.

Ask our travellers how their customers who are using it appreciate it.

**It is the Best Low Priced
Alloy on the Market**

SEND US A MAIL ORDER NOW

Ash's Popular Amalgam

**\$1.00 Per Ounce
5 Ounces for \$4.5**

Ash's Canadian Monthly Circular

VOL. I.

TORONTO, MARCH 1, 1911

No. 6

RECIPROCITY.

The question of reciprocity with the United States, that is so prominently before us at the present time, suggests a short review of the tariff conditions of Canada and the United States as they affect dentists' instruments, tools, equipment and materials. The ensuing schedule gives the great difference that exists in the tariff of the two countries in respect to these articles.

Article.	United States.	Canada.	
		General Tariff.	Prefer- ential.
Teeth, ad valorem	45%	Free	Free
Instruments of metal used in the mouth.	45%	Free	Free
Tooth Soap Dentifrices.....	60%	35%	22½%
Manufacturers of metal and wood, such as Chairs, Cabinets, En- gines, Lathes, Bellows, etc.	45%	30%	20%
Glassware, Bottles, etc.	60%	32½%	20%
Fountain Spittoons, etc.	60%	35%	22½%
Rubber, etc.	35%	27½%	15%
Syringes, etc.	45%	Free	Free
Physiological Apparatus and Instru- ments to alleviate suffering....	45%	Free	Free

The above comparisons will enable the dentist to see at a glance that the Canadian tariff is more favorable to an enormous extent to the Canadian dentist than to his fellow practitioner across the line. The result of the high tariff wall that hedges the United States is to shut off competition of the world's market. The manufacturers in the United States are immune from outside com-

petition, and completely control the situation. One of the resultant evils is that the American manufacturer, hiding behind his high tariff, secure from fair competition, sells his product in Europe at a lower price than he does in his own country. The dentists in the United States have long known this, and have at various times petitioned the Government to reduce the duties, but not only have they met with refusal, but the duties have been greatly increased. Twenty years ago, when teeth were less than half the present price they are to-day, the duty was 20 per cent. It is now 45 per cent. So not only has the manufacturers' cost increased, but the duty on the added cost has more than doubled. It seems peculiar that the United States should desire us to lower the duties on some goods coming into Canada and totally remove them on others, when it is an established fact that their own policy is the reverse of what they are desirous of having Canada adopt to-day.

TWO REMARKABLE CASES OF PULPITIS PARTIALIS

A HISTOLOGICAL STUDY.*

BY DR. MED. TOHL SCHMAMINE, of Tokio.

Microscopical studies of inflamed organs usually give good and instructive results, if we are able to observe the inflammations in their initial stages. The fine reactive processes especially, in the tissue of the surroundings of the inflammatory hearth, can very often be most clearly shown. This general experience holds good particularly in the study of inflammatory processes in the pulp. When the pulpitis partialis has become pulpitis totalis such severe lesions of the tissues have occurred that we are often not in a position to obtain satisfactory results by means of the ordinary staining methods.

It is true that pulpitis partialis has been diligently studied by many distinguished investigators (Arkövy, Rothmann, Walkhoff, and others). All the same, however, it offers an interesting field for investigation, and, with our modern endeavours to treat the diseased pulp conservatively (Hentze), extensive histological investigations appear to be indicated. A scientific explanation is still greatly required as to the conditions under which a diseased

*From the Transactions of the Surgical Section of the Royal Dental University Institute in Berlin. Dean: Professor Dr. Williger. Translated from the Correspondenz Blatt für Zahnärzte.

pulp is capable of healing. Only when we are exactly instructed in regard to this point shall we be able by suitable measures to aid the natural processes. Of course it is difficult to procure suitable material for investigation in these days, because most pulpitic teeth are conservatively treated in advance, and hence cannot be subjected to microscopical examination.

In general, we may perhaps maintain that pulpitis appears mostly in the wake of caries and the bacterial activity which is present in this connection. There are, of course, stages of pulpitis in which the infection has reached the pulp, not through carious cavities, but through other ports of entrance. The most usual case, however, is that in which, through the approximation of caries to the pulp chamber, conditions are offered for the immigration of bacteria into the pulp. How the bacteria get there, what action they exercise, and in what condition the pulp is found, depends upon the variety of the form of inflammation present and the clinical symptoms resulting therefrom.

According to the work of Fleischmann and others it may be accepted as certain that Tomes' fibres are direct protoplasmic processes of the odontoblasts, and form the contents of the dentinal tubes. Every irritant, therefore, which proceeds from without—the bacterial toxins belong to such irritants—as soon as it has reached the dentine must be transmitted by Tomes' fibers to the pulp tissue. By the same passages the bacteria would penetrate into the pulp and there cause inflammatory processes.

As the pulp is wholly enclosed by unyielding walls, even a small inflammatory hearth must produce strong symptoms of pressure and congestion. For this reason we can understand that an inflamed section, only of the size of a pin's head, in the pulp may cause the most intense pain, whereas similar small hearths, for example, in the skin may possibly remain quite unnoticed.

Not infrequently, however, we are able during microscopical examination of the carious teeth which have not yet exhibited any painful symptoms to find small inflammatory hearths in the pulp. Pathologico-anatomically, pulpitis certainly exists very frequently without pain being experienced by the patient. Most pulps, indeed, as is well known, often decay without pain—that is to say, without the most important clinical sign of pulpitis. Partsch expresses himself, in regard to this decay of the pulp which takes its course without pain, in his work "Ueber den Zerfall des Zahnmarks" (On the Decay of the Dental Pulp), in the following words: "Certain conditions may, no doubt, be necessary in regard to the removal of the decayed masses produced by the necrosis;

especially important is the possibility that, through a corresponding defect in the pulp covering, there is free communication with the buccal cavity . . . for nowhere do we observe so clearly as in the tooth the correctness of the proposition, that the presence of the bacterium is not necessary for the production of the symptoms of the disease, but that external conditions, such as the conduct of the products of the disease and the limitation of free communication outwards, are capable of producing the clinical symptoms."

Pulpitis partialis does not need to make itself especially felt by pain, for it may happen that during the slow course of the disease the pulp is able to help itself. That such self-help is possible has been proved by several cases which are recorded in dental literature.

A case of self-help of a diseased pulp was described by Gysi ("Schweiz. Vierteljahrsschrift für Zahnheilkunde, October, 1900, page 254). The case was that of a first molar which had been extracted from the maxilla of a strong, healthy girl, who was in her twelfth year of life. From the illustrated preparation, we are able to observe that a cone of the pulp, which was infected with bacteria and severely inflamed, is encapsuled with secondary dentine and is thus separated from the remaining tissue. In this case, therefore, a kind of self-healing occurred.

A second case has been described by Miller ("Deutsche Monatsschrift für Zahnheilkunde," No. 9, September, 1903). An upper bicuspid of a youthful individual had been destroyed by caries at the approximal surface to such an extent that a cone of the pulp had been affected sympathetically to a very great degree. The pulp, however, succeeded in forming a surprisingly large mass of secondary dentine, by means of which the inflammatory hearth was entirely isolated.

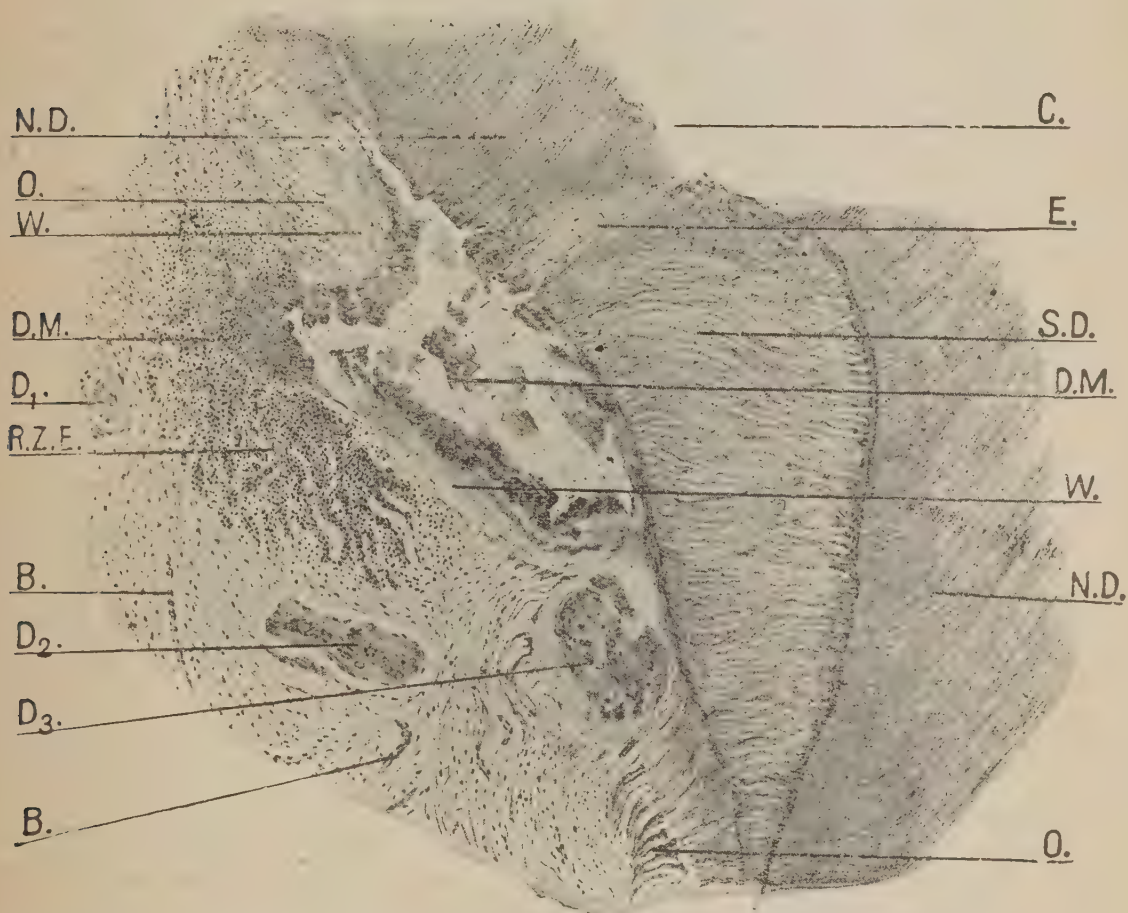
Miller describes another case, in which we have to deal with a mandibular molar, the enamel of which had all been destroyed excepting some very slight remnants. The softening of the dentine had already reached one cone of the pulp, and the pulp would have encapsuled the hearth by means of secondary dentine, as the illustration shows, if the tooth had not been previously extracted. At the same time the pulp had commenced to isolate a second cone which exhibits the remains of an abscess.

Prof. Williger has placed at my disposal a similar case from his collection. Here it was a question of a second molar which had been extracted from the mandible of a strong and healthy man. The carious tooth, which up to that time had not caused any pain, was removed because it had no antagonist. It must be specially emphasized that the tooth had never been treated, so that we are

able to see in it the natural capacity of the pulp to protect itself against pathological attacks.

Fig. 1 is the reproduction of a serial section through the crown of this tooth. From the preparation we can see that the enamel layer has been entirely destroyed by caries (Fig. 1, **C.**), and that the dentine is affected. The pulp has formed a broad layer of secondary dentine against the caries. It is demarcated by a very sharp well-developed dark line (**S.D.**). The secondary dentine

Fig. 1.



C.—Dental section hollowed out by caries.

E.—Softened dentine.

B.—Blood-vessels.

D.M.—Mass of detritus.

R.Z.E.—Deposit of round cells.

N.D.—Normal dentine.

S.D.—Secondary dentine.

O.—Odontoblasts.

D1.—

D2.—Denticles.

D3.—

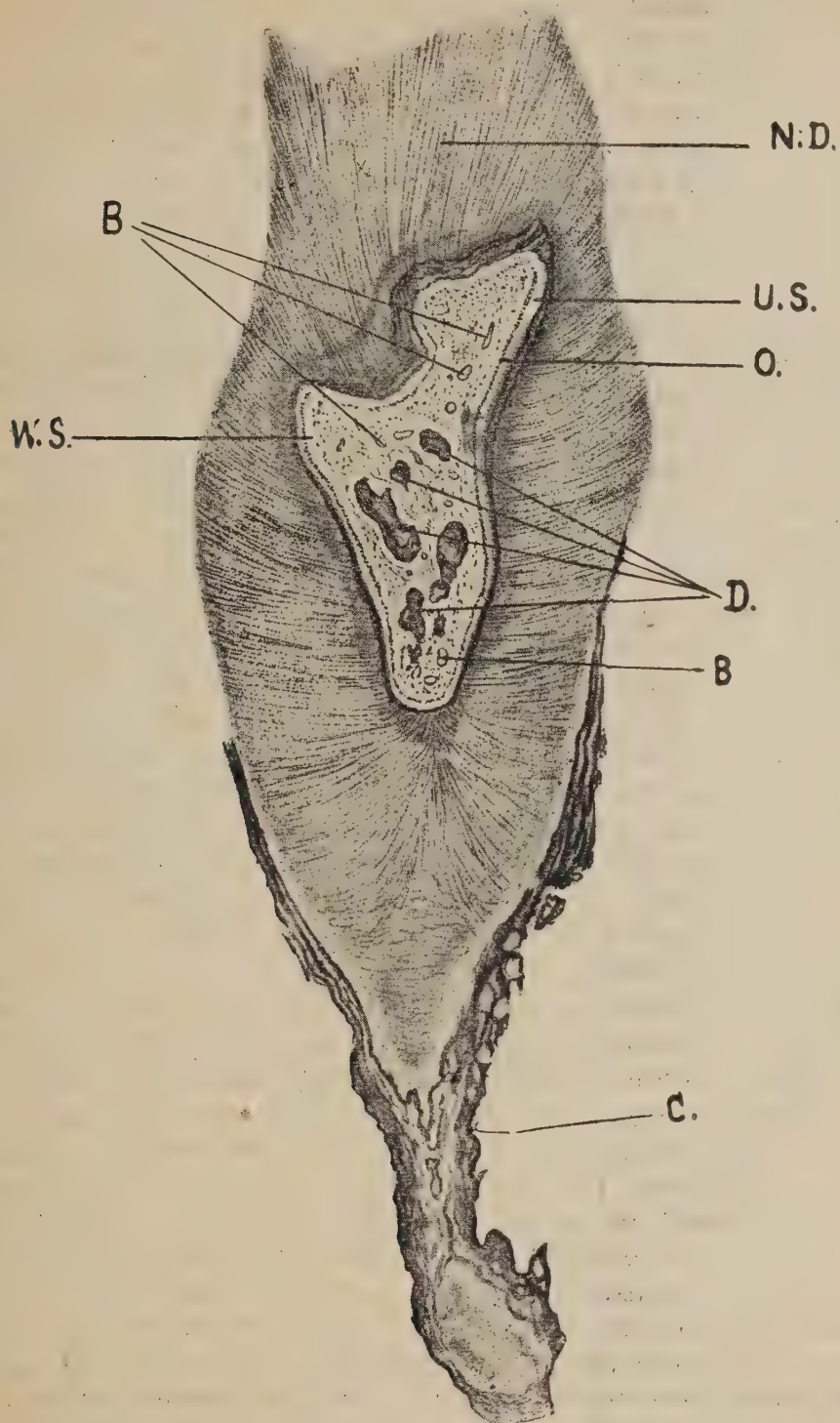
W.—Dam of secondary dentine.

lying between the deepest point of the carious cavity and the pulp is diseased (**E.**). A narrow zone situated nearly in the centre of the secondary dentine is considerably more discoloured than the

neighbouring parts. The dentinal tubes in this region appear somewhat swollen. Below the secondary dentine we observe a hollow space, in which we find an intensely dark coloured mass of detritus (**D.M.**). This hollow space, in the direction of the pulp, is isolated in a dam-like manner by a second layer of secondary dentine (**W.**). At the deepest point of the dam the continuity is broken, and by this means there is communication between the pulp and the hollow space. The first protection of the pulp against the penetrating infection is therefore afforded by the formation of the secondary dentine (**S.D.**). The destructive processes broke through this protecting dam. Through individual dentinal tubes the infection was transmitted to the neighbouring portion of the pulp. Pulpitis partialis arose, during the course of which decay of the tissue took place. The pulp was now able to protect itself against the further spread of the inflammation by means of a second dam of secondary dentine which it built up in front of the diseased portion (**W.**). Thus the pulp was protected for the second time. But this protection was likewise broken through. As the pulp was now again exposed the inflammation once more affected it, evidence of which is afforded by the visible round cell deposition in the tissue (**R.Z.E.**). The odontoblasts which formed the secondary dentine were destroyed, all but some small remnants (**O.**) which became atrophied. It is remarkable that this partial pulpitis had been limited only to a very small region, for after cutting four or five serial sections the round cell hearth disappeared. The pulp then endeavoured for the third time to build a protection against the penetrating inflammation. This is proved by the denticle formation (**D₁, D₂, D₃**) which surrounds in crescent form the region infiltrated with round cells..

Fischer and Landois, who have lately investigated exhaustively the formation of denticles, divide them into those which stand high and those which stand low, and think that they are of physiological origin—that is to say, are caused by physiological irritants. This view is new, and up to the present has not been generally accepted. It has hitherto been the opinion that in just such pulps—pulp which are exposed to pathological influences—most denticles are found. Thus, for example, it is known that teeth affected with polypi of the pulp usually exhibit very many and large denticles. The illustration before us appears to me to be a distinct proof of the opinion that the three “low-standing” denticles (**D₁, D₂, D₃**)—for such they are—were formed by the pathological irritant which proceeded from the inflammatory hearth. Now, it would at least be a forced supposition to assume that these denticles, which form a distinct semi-circle around the inflammatory region, should previously, for physiological reasons, have occupied this position.

Fig. 2.



C.—Caries.
 N.D.—Normal dentine.
 U.S.—Uncalcified layer,
 O.—Odontoblasts.

W.S.—Weil's layer.
 B.—Blood-vessels.
 D.—Denticles.

The case of pulpitis partialis quoted above therefore proves anew that inflammatory processes in the pulp need not make themselves noticeable by means of pain. The absence of pain, of course, will only be possible when the process proceeds slowly and time is thus allowed to the pulp to protect itself against pain. Furthermore, pulpitis partialis may likewise appear without pain, as Partsch has already emphasised, when there exists free communication between the inflammatory hearth and the buccal cavity, so that the products of decay cannot be retained. I have had the privilege of receiving such a tooth for microscopical examination.

It was a right first molar which had been extracted from the maxilla of a man fifty years old. The tooth, which possessed no antagonists, was removed because it prevented the insertion of a dental substitute. It had never given pain, although the palatine root was free of gum and exhibited considerable caries. As root caries has been very rarely and very little described, I have, with great interest, made sections of the tooth in the laboratory of Prof. Williger.

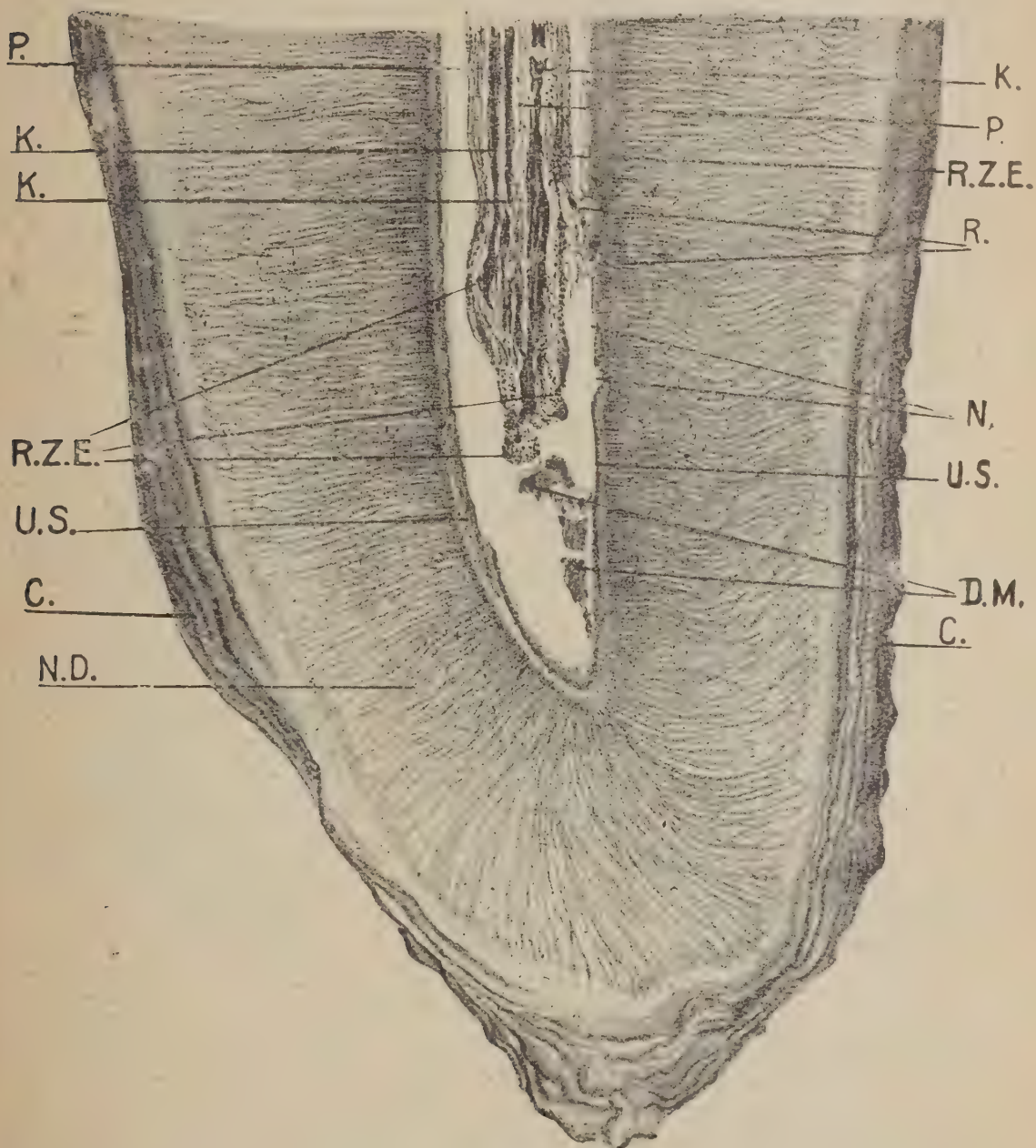
When caries appears in a tooth it usually does so on the crown, as this is mostly exposed to external influences; but roots, which are protected by their natural position, may also fall a prey to carious processes when they are robbed of their protective covering.

As may be observed in Fig. 2, caries has destroyed the cement layer and has reached the dentine. The pulp, shown in the line of the section, remained alive. It is atrophied, which, considering the age of the patient, is not surprising. Below the normal dentine (**N.D.**) we notice in it a narrow zone of uncalcified substance—**U.S.** (dentinogenesis, Walkhoff). Thereupon follow the atrophied odontoblasts (**O.**), and below them Weil's layer (**W.S.**). In addition to this we see somewhat indistinctly the zone of heaped-up connective tissue cells (intermediary layer, Walkhoff), and in the centre of the pulp there are deposited about six denticles.

Fig. 3 represents the apical root portion of a further section taken from the same tooth. Here we are not able to observe the carious losses of substance in the root portion which can be recognized in Fig. 2. The cement layer (**C.**) and the dentinal tubes in the dentine are intact, but the pulp section on the whole is unchanged. Through the section the pulp has been partly torn away from the dentine wall, and appears as if it were freely suspended. Above we see darkly coloured lime spears (**K.**) which have been deposited in the walls of the vessels. In addition we distinctly observe a round cell deposition (**R.Z.E.**), which in a downward direction becomes more marked. The uncalcified (dentinogenous) substance is present nearly everywhere, but the odontoblasts have

been entirely destroyed through the inflammatory process. In the direction of the apex of the root there are masses of detritus lying about (**D.M.**). On the right inner wall of the pulp chamber we

Fig. 3.



C.—Cement.
 N.D.—Normal dentine.
 U.S.—Uncalcified layer.
 P.—Pulp.
 K.—Lime spears (in the vascular sheaths).

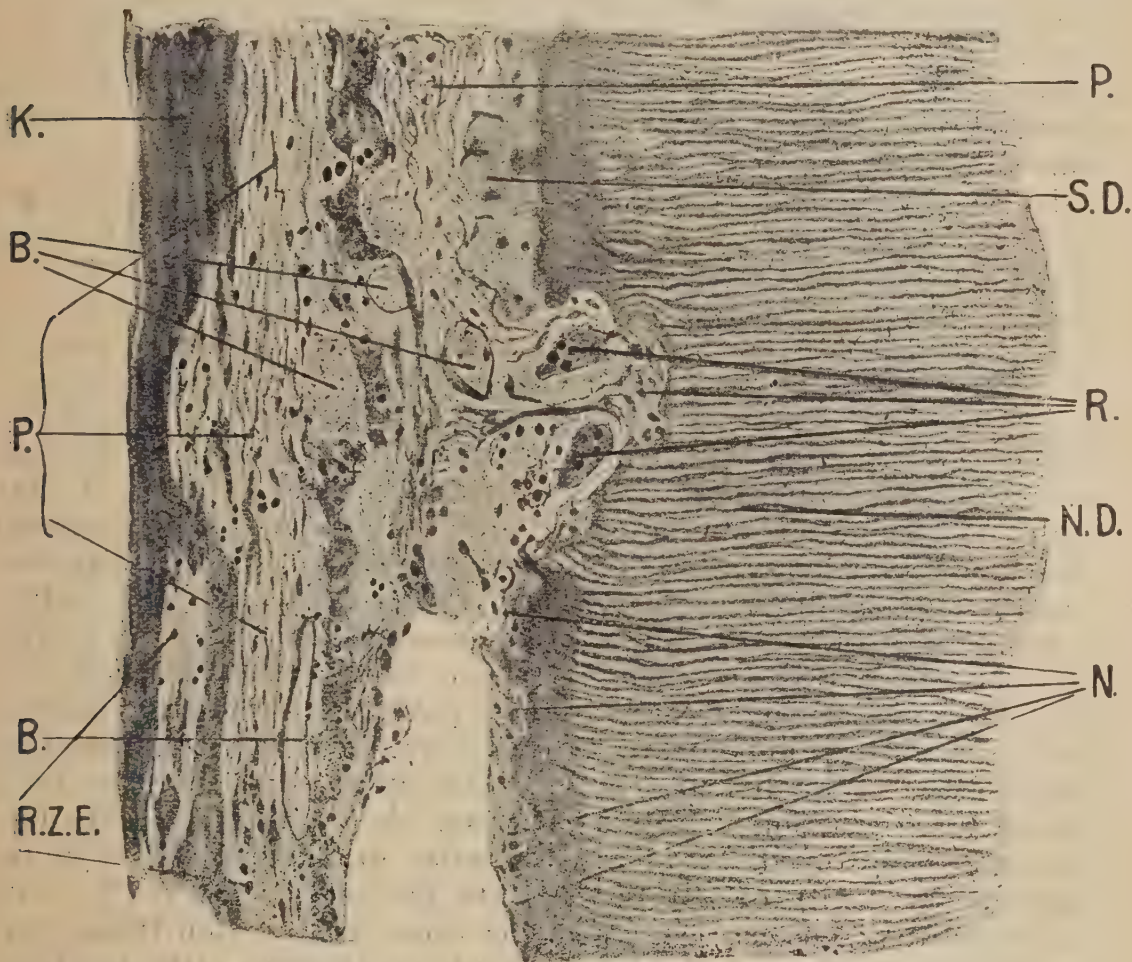
R.Z.E.—Deposition of round cells.
 D.M.—Mass of detritus.
 N.—Notches.
 R.—Giant cells.

observe a few notches (**N.**). In the two highest bays we distinctly see two round cells (**R.**).

Fig. 4 represents a portion of Fig. 3 (the region of the giant cells) magnified. To the right we see the normal dentine (**N.D.**). It becomes clear, from the deposition of round cells (**R.Z.E.**) and the enlarged blood vessels (**B.**), that there has been a process of inflammation in the pulp. We can very distinctly see the giant cells (**R.**) and the notches (**N.**). The young granular tissue with the participation of giant cells (odontoblasts) has produced bay-like notches of irregular form in the dentine of the root. This circumstance proves in the most distinct manner that the process was chronic, for it is certain that the odontoblasts have required considerable time for this purpose. Fischer, in his work, "Beiträge zur Behandlung erkrankter Zähne mit besonderer Berücksichtigung der Anatomie und Pathologie der Wurzelkanäle," in der deutschen Zahnheilkunde, 1908, No. 45, page 23 (Contribution in regard to the treatment of Diseased Teeth, with especial reference to the Anatomy and Pathology of Root-Canals), says: "In addition to the process of lime deposition, we are more than all struck by the processes of dissolution which may occur in the dentine and in the cement, in consequence of acute and chronic inflammations of the pulp. How, nearly always, destructive and reparatory processes are found side by side is emphasized by Wunschheim. Thus we observe that, in all cases, through the eroding activity of the newly-formed tissue there is produced pronounced dissolution of the original dental tissue in the form of ragged bays, which we designate as Howship's lacunæ or lacunary resorption. The granular tissue, which with every inflammation reaches development, possesses to a high degree the quality of dissolving lime-salts and of thereby exercising erosive action upon the dentinal wall. After the odontoblasts are destroyed, the young, vascular granulation layer finds ample opportunity of penetrating into the dentine layer. I have observed numerous cases in which the young granulation tissue has produced, sometimes with the participation of giant cells, bay-like notches and resorption lacunæ of most irregular form, in the hard tissue. In a special case I was able to follow the progress of this resorption from the crown of the pulp deep down into the root. Like the normal hard substances—dentine and cement—new dentine formations, such as denticles and substituted dentine, as well as structureless, putrefactive tissue may fall a prey to resorption or to segmentation in the same manner as dentine and cement. One step further and we likewise see how the narrow spaces in the dentine of the root are attacked and, through the growths of granular tissue, appear in bays enlarged and segmented."

In the case under consideration the destructive process attacked the lowest portion of the apex of the root. In consequence of this chronic pulpitis partialis appeared in the root pulp. The inflammation, however, was limited to a very small portion of the pulp in the root. The products were able to flow away, so that no pain occurred. On examination of Fig. 3 the question involuntarily occurs: Whence has the pulp in the crown received its blood sup-

Fig. 4.



P.—Pulp.

B.—Blood-vessels (enlarged).

N.—Notches.

K.—Calcifications.

N.D.—Normal dentine.

S.D.—Secondary dentine.

R.Z.E.—Immigration of round cells.

R.—Giant cells.

ply? for, according to the illustration, the pulp in the root appears to be entirely destroyed. The following two explanations are conceivable:

1. Either the root possessed several foramina apicalia, so that the pulp, after the destruction of the chief nutritive rope, received its supply through a collateral canal. Many authors on carefully

examining the roots have found several foramina apicalia. Baume says: "Moreover, the root-canals often end, not singly, but divided several times into almost microscopical canals." In most recent times Fischer, in his work, "Beiträge zur Behandlung erkrankter Zähne mit besonderer Berücksichtigung der Anatomie und Pathologie der Wurzelkanäle" (Contribution in regard to the treatment of Diseased Teeth, with especial reference to the Anatomy and Pathology of Root-Canals), has dealt with this matter, and has exhaustively demonstrated on corrosion preparations the fine ramifications at the foramen apicala. He arrived at the same results which Preiswerk had previously gleaned through his corrosion preparations obtained in another way.

2. Or the tissue of the root-canal was not decayed throughout, as one would conclude from the section, but at some point or other the rope had remained which in this case had provided the nutriment.

Although I examined all sections of this root, in regard to this possibility, I could nowhere find living tissue up to the foramen apicala. I therefore believe that in this case the pulp was ramified at the apex of the root and had received its nourishment through an auxiliary canal.

The two cases quoted prove the great vital capacity of the pulp, notwithstanding the fact that this organ in itself does not exist under particularly good conditions of life. If we take into account that the comparatively large pulp receives its nutriment through a few tiny foramina, we may wonder that it is at all capable of surviving inflammations, and yet it is possible for it to do this, as the cases of Miller and Gysi incontestably prove. Of course—at all events in the human pulp—a restitutio in integrum appears excluded. What has once been destroyed by inflammation is not regenerated. Yet the healthy portion of the pulp is able to protect itself against the progress of the inflammation by the formation of new dentine.

It is, however, probable that accidental small lesions of the pulp, as they occur during the excavation of cavities, heal in a similar manner. At all events, it is well known that under fillings which reach close up to the pulp very strong secondary dentine formation occurs.

The fact, which has previously been confirmed histologically on several occasions, and again through my first case, that pulps which have never caused pain may yet contain an inflammatory hearth, makes us think that the decay of the pulp under a filling may occur also in another way than we usually assume.

In gold fillings we most blame the malleting; in cement fillings the excess of acid or the presence of arsenic (silicate cements). It is conceivable, however, that the presence of pulpitis may not be diagnosed, which under the filling will make further progress. This thought puts upon us the duty, in living teeth with deep caries, of careful examination for the purpose of finding out if any hidden pulpitis exists. The difficulty of this task is very great. It can only be solved by examination with the induction current so excellently developed by Schröder.

At the conclusion of this work, I fulfil an agreeable duty in heartily thanking Prof. Williger for his kind support, both by word and deed, and for his permission to use his laboratory during a whole year.

DENTISTS LOSE ACTION AGAINST DENTAL COLLEGE

In the action brought by F. W. Gordon and W. J. Bushnell, dentists, against the Royal College of Dental Surgeons of Ontario, the action and appeal are dismissed.

This action was brought to obtain a declaration that by-laws whereby the college sought to prevent dentists from entering the employ of a layman carrying on business as "dental parlors," were *ultra vires*.

The plaintiffs were employed by James E. Henry at the Toronto Dental Parlors.

"We are not judges of the plaintiffs' conduct," says Mr. Justice Garrow. He adds: "All we are required to say is, (1) is the by-law which prohibits such conduct as that before set out, within the powers conferred by the statute; and (2) is it in its terms a reasonable by-law? And to both questions I would, without any hesitation, answer in the affirmative."

"DRUMMED OUT."

Mr. Justice Meredith says: "The real question in this action is whether F. W. Gordon and W. J. Bushnell can be 'drummed out' of their profession under the provisions of a by-law enacted by the Board of Directors of the Royal College of Dental Surgeons of Ontario merely because they have chosen to exercise their profession in such a manner that one who is not entitled to practice dentistry, may make some profit thereby. There is certainly nothing very scandalous in that which the plaintiffs have done and which they claim the right to do. The onus of showing that the defendants have the extraordinary power they claim rests upon them, and I am quite sure that that has not been done; at the very least, the enactment in question is quite too doubtful to impart to it any such drastic effect."

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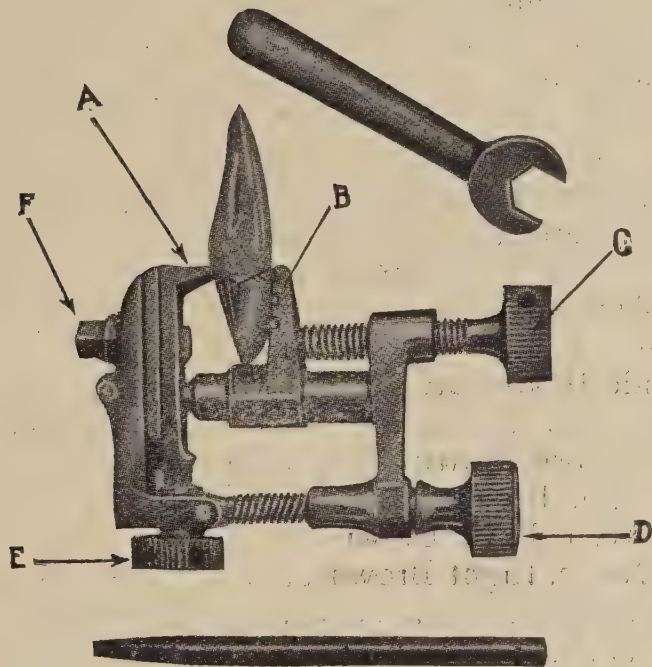
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Soft Pink, for lining Palates.....	310	1	15	\$6.00
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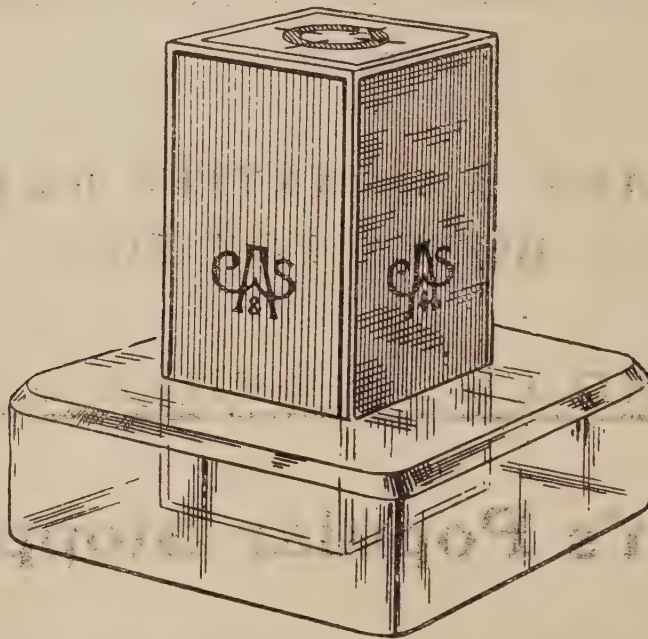
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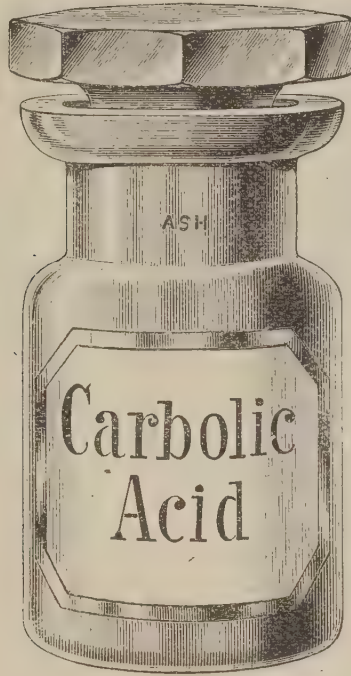
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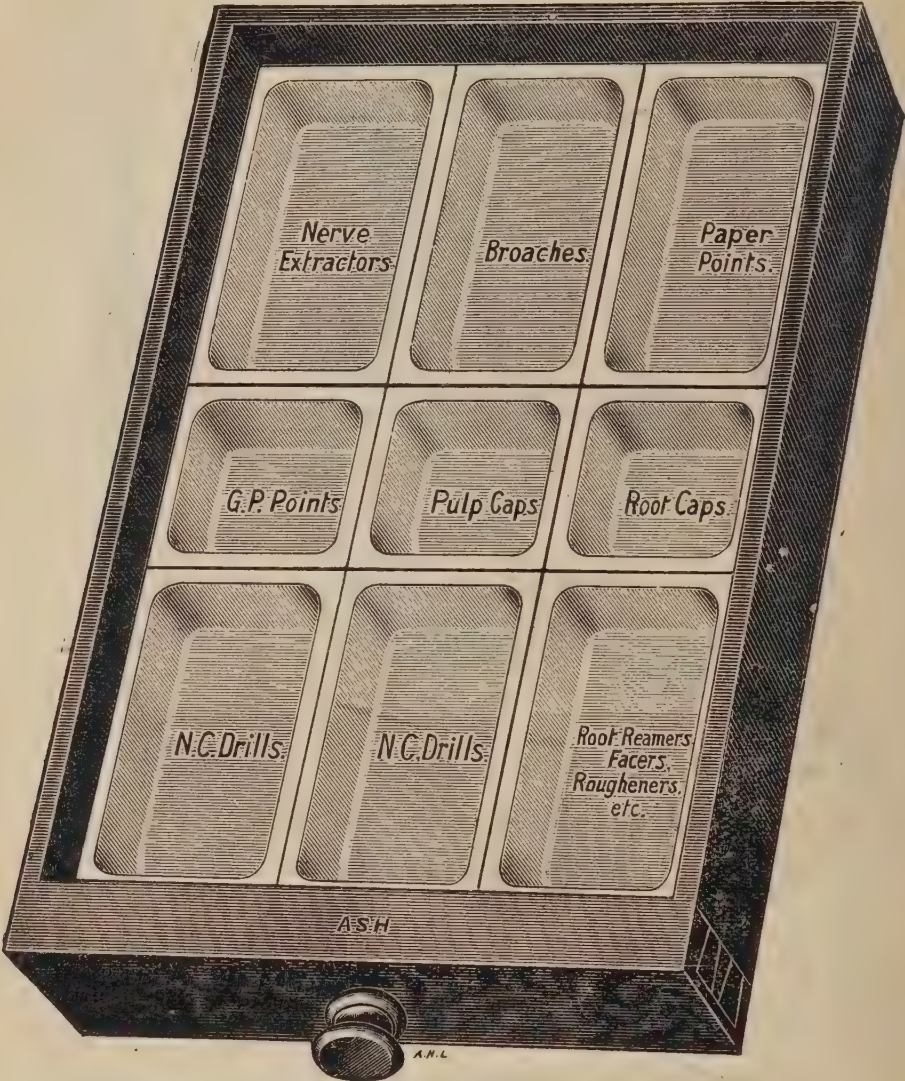
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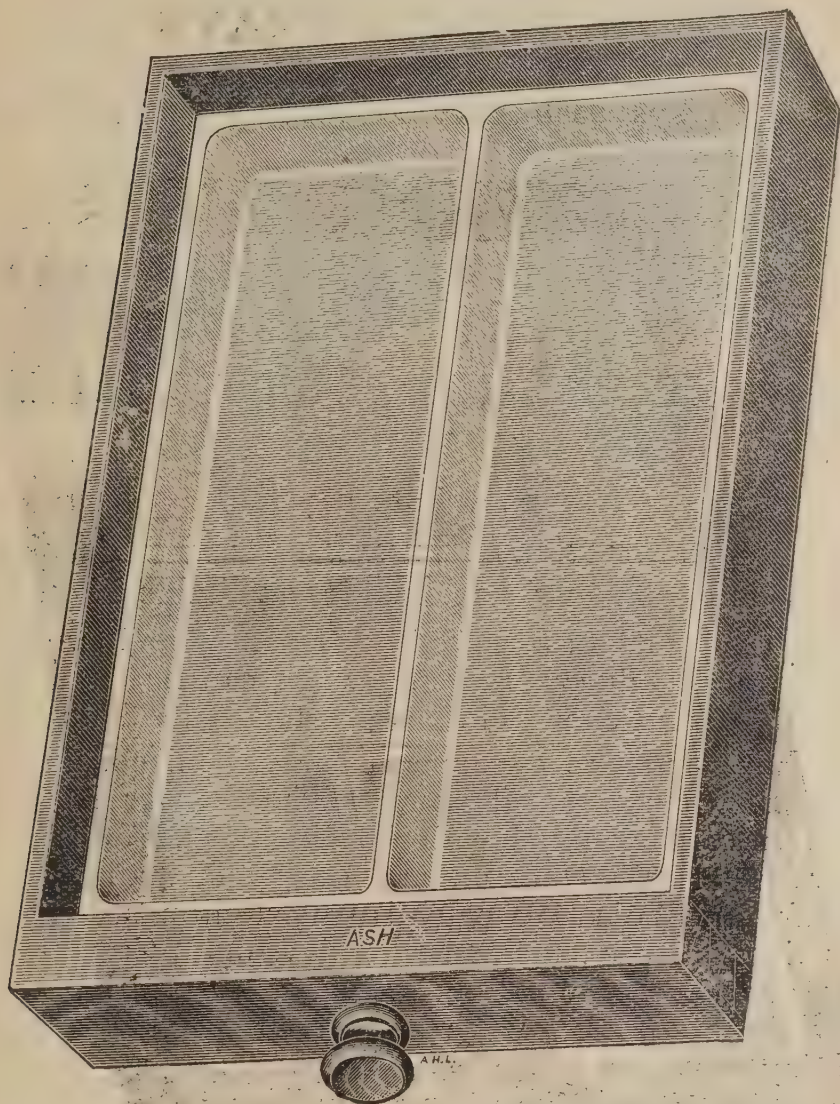
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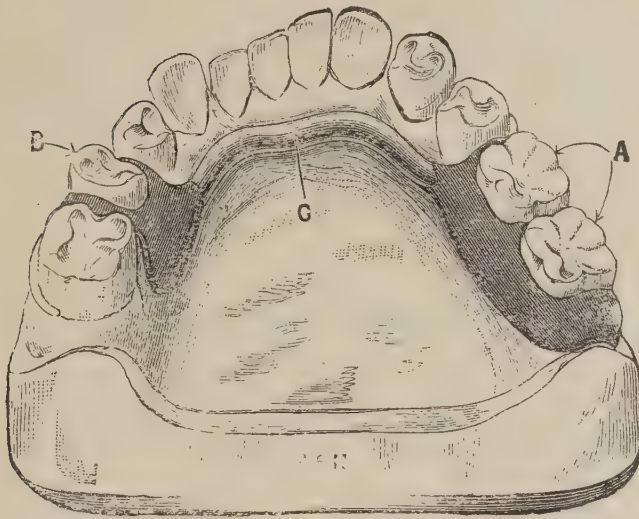
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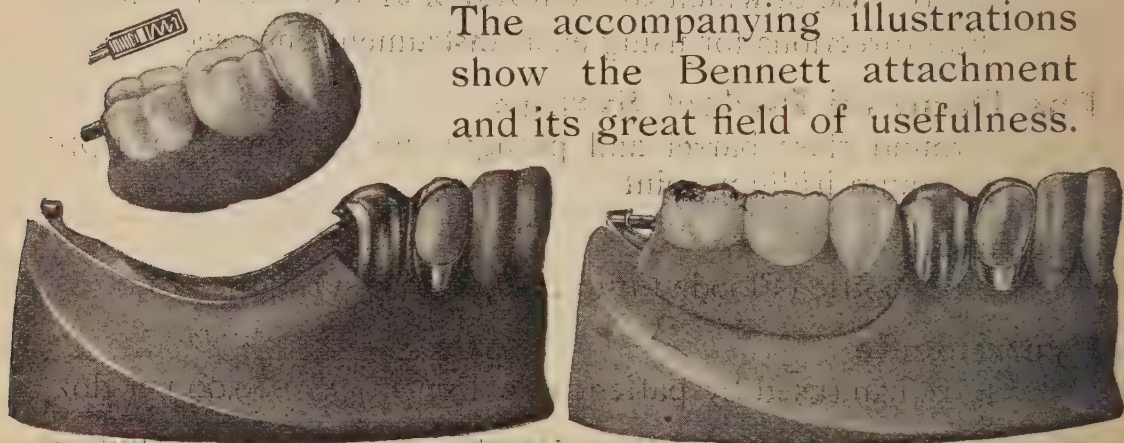
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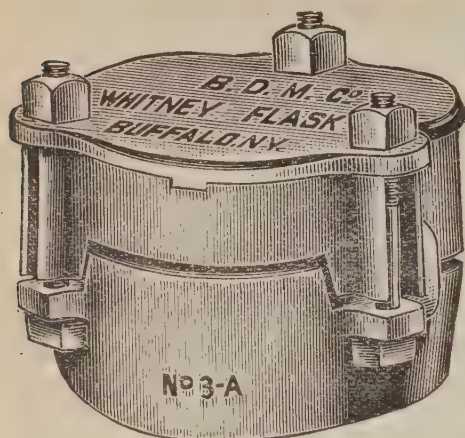
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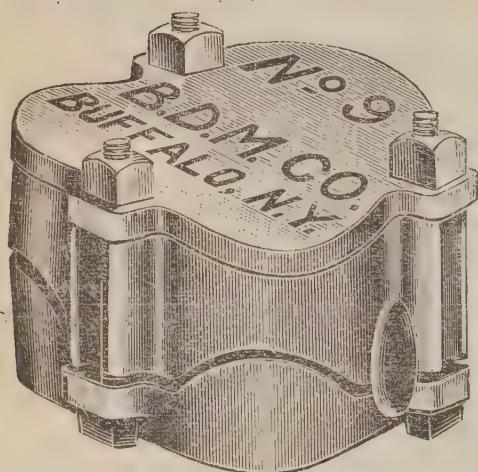


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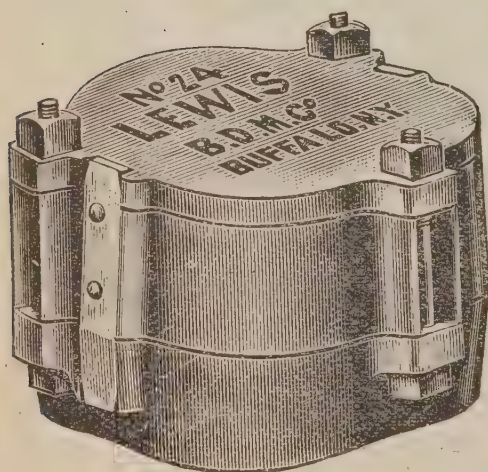
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No. 24 Flask. Heavier and roomier than any other, and made for wear and long service regardless of expense. Milled and faced joints and heavy steel guide pins.

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You are almost certain to find what you want among the nineteen patterns illustrated in our Catalog "C" and we want you to tell us of a special case we do not cover. The above just to show what to expect. Ask for information concerning them.

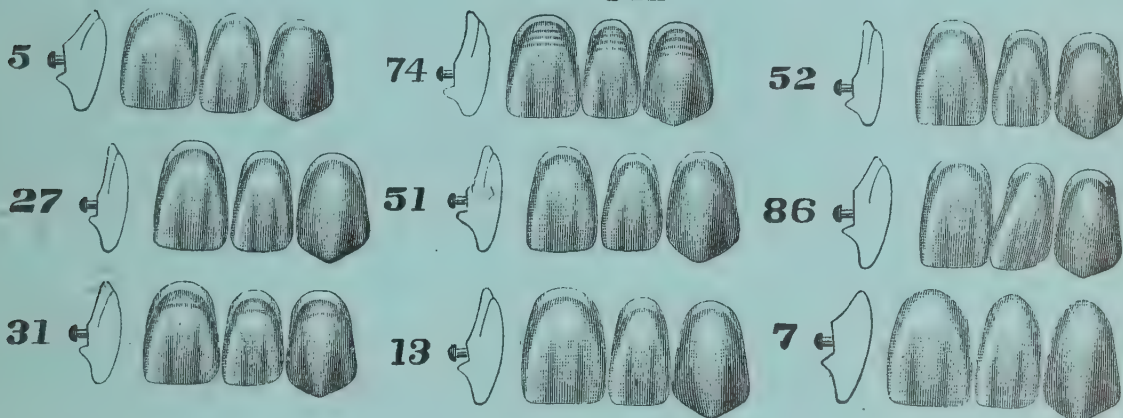
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BUFFALO, N.Y., U.S.A.

UNIVERSAL TEETH

SMALL



MEDIUM



The Most Useful Stock of Teeth for a Dentist to Carry on Hand

It will be observed from the illustrations that there are no extreme sizes. Two of the molds (56 and 86) have lapping laterals and two (52 and 74) have short bites. The balance have medium bites. The shades usually furnished are 6 or 8 of the best medium tints. These are supplied in combination sets, Platinum Pin, or Metalite, Teeth,

PRICES BEING:

Combination Sets of 14	-	-	-	\$1.46 Each
Platinum Pin Sets of 14	-	-	-	2.66 "
Metalite Sets of 14	-	-	-	1.00 "

(1x14 \$1.00, 11x14 \$10.00, 28x14 \$25.00, 58x14 \$50.00, 120x14 \$100.00.)

In \$100.00 lots we allow a discount of **10%** for cash and by the deposit of \$90.00 you can obtain \$100.00 worth of teeth to be delivered to you as wanted.

For years we have been making up for our customers, selections of teeth composed of these molds. By the test of time they have proven themselves to be universal sizes constantly in demand. With a stock of these popular sizes in the office most dentists will be surprised to find how fast they are used and how often the stock needs replenishing.

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Ash's Dowel Crowns

If you have not figured out this
Crown proposition, **Do it now!**

The price is right, but it is not only the price that appeals to so many dentists, as the moulds and texture of these teeth.

A leading dentist wrote us in February as follows:—

"I see by your advertisement that you have Dowel Crowns in shapes that I have been looking for for some time with negative results, and I am glad to see that you are placing them on the market."

This is only just one of a great many voluntary letters written to us regarding these crowns.

The moulds are exceptional and are adapted to all cases in the human mouth. The texture and strength are unsurpassed by any crown on the market to-day.

The sale that these crowns have enjoyed since they were freely placed on the market has been greater than had been anticipated, and we are selling many thousands of them each week. The scale of prices given below will more than interest you. We would draw your attention to the shape of the pins for these crowns, which have been most favourably received.

Single Crowns	12c. each
100 Crowns.....	\$10 00
500 Crowns.....	47 00
1000 Crowns.....	90 00
Dental Alloy Pins, Single.....	25c. each
Dental Alloy Pins, Bifurcated.....	35c. each
Base Metal Roughened Pin, New Style....	5c. each

Above prices subject to 5% cash if purchase amounts to \$25.00 or over. Compare these prices with rates charged for other crowns. You will be surprised at the saving to be had by using Ash's Crowns.

CLAUDIUS ASH, SONS & CO., Limited

11-13 Grenville Street, TORONTO ONT.

ASH'S Canadian Monthly Circular

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No. 7

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ASH'S POPULAR AMALGAM

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5 Ounces for \$4.50

Ask our travellers about it or better still, sit right down and send us a MAIL ORDER now. The price is certainly attractive and the guarantee of the oldest house in the world protects you.

SEND US YOUR ORDER

Ash's Canadian Monthly Circular

VOL. I.

TORONTO, APRIL 1, 1911

No. 7

A COMMERCIAL IDEA OF PROSTHETIC DENTISTRY IN ITS RELATION TO DENTURES.

In North America, the esthetic in vulcanite work is greatly neglected. Not only, however, from the standpoint of beauty and naturalness, but also in respect to durability, the proper selection of the class of teeth and the employment of proper materials.

The average Vulcanite Denture is certainly not a thing of beauty, nor does it make much pretence at imitating nature. The rubber used is seldom suitable. Invariably the dentist bows to the wish of the patient, and makes a plate of red rubber, because the patient's very dear friend, Mrs. Blank, has a red one. The plate is made with a perfectly smooth surface without a reproduction of the natural rugae of the patient's mouth. After the case has been vulcanized, the rubber is scraped and sandpapered. All the good of vulcanizing is thereby taken away, leaving a denture of varying thickness, and of course porous, as all the best effect of the vulcanizing has been scraped away.

The teeth that are selected, whether the case demands it or not, are often in the case of the bicuspid and molars, extremely short on the lingual side. The rubber, therefore, comes right down almost to the grinding surfaces of the teeth on this side. The rubber is also allowed in most cases to come almost as low on the lingual side of the anterior teeth. All this presents an almost solid wall of rubber to the tongue from molar to molar.

The vulcanite itself in the case of the ordinary red vulcanite denture is made very thick in order to get the required strength. This gives unnecessary weight and thickness, where space is so extremely valuable and where lightness is especially desired, not only to assist in properly keeping the denture in place without the aid of suctions, but is also from the standpoint of coolness to the patient's mouth. The patient is thus partially gagged and articulate speech is hampered. The teeth, if not covered with rubber, act as a magnificent sounding board.

an objective manner, what I, as a chemist, can say in reference to silicate cements. On account of the complexity which is characteristic of the chemistry of silicate cements, you must not expect that I shall write down many formulae for you, or advance much theory. I would rather describe to you the work of the chemist who makes it his business to discover a filling material of the nature of silicate cements, to test it, and finally to manufacture it.

The name "silicate" has in reality not been happily chosen. It may be supposed that this new kind of cement is distinguished from the long-known zinc phosphate cements by the fact that, in lieu of phosphoric acid, silicic acid is employed. As a matter of fact, however, the liquid with which we mix both kinds of powder is chiefly the same phosphoric acid; the powders only are substantially different. In the zinc phosphate cements the powder, as is known, is a highly calcined zinc oxide, and the completed filling therefore consists of phosphate of zinc. The different additions which may be found in the powders and liquids, according to the manufacture, I will leave aside for the moment. In the silicate cements the powder mostly consists of aluminium silicates solely or mixed with beryllium silicate. In its preparation there is therefore respectively produced—analogueous to the phosphate of zinc—phosphate of alumina, beryllium phosphate, and free silicic acid. Free silicic acid is present in the silicate cements—hence the name "silicate"—not as a substitute for phosphoric acid, but as an addition, in the same way as it is added, without exception, to the phosphate of zinc cements. The difference in regard to the silicic acid in both kinds of cement is therefore only quantitative, and this difference disappears entirely in some so-called silicate cements, which—at least, according to the patent specifications—contain no silicic acid whatever.

Physically, the silicate cements are principally distinguished—for the sake of convenience we will retain the name "silicate"—from the zinc phosphate cements by their great transparency and beautiful tooth-like brilliancy—qualities which have made the silicate cements a filling material of the first rank.

The endeavors to find a more tooth-like, transparent filling in place of the dead-looking zinc phosphate cements are very old. In the year 1879—scarcely a year after Rostaing's invention—Thomas Fletcher applied for a patent for a cement which consisted of a solution of phosphoric acid on the one hand, and a melted mixture of aluminium oxide, silicic acid, and lime on the other. I here show you the material—(demonstration)—which

externally is absolutely similar to the silicate cements. Nevertheless, this preparation was not a success, and a quarter of a century elapsed before Ascher and others succeeded in manufacturing really useful silicate cements, based upon Fletcher's attempt. I am obliged to enter somewhat closely into the reasons which caused the imperfection of Fletcher's preparation, and I will, at the same time, show you the limitations which still beset us in regard to the employment of silicate cements. Miller, in his *Zahnheilkunde*, indicates the following twelve qualities which an ideal filling material should possess:—

1. —Sufficient hardness, so that it does not suffer in the mouth through mechanical action—in wear or in alteration of shape.
2. Unchangeability by the fluids of the mouth and the foods which are taken.
3. Unchangeability of form and volume in the mouth.
4. Bad heat-conducting property, so that every change of temperature in the mouth is not transmitted to the pulp.
5. A high degree of adhesiveness, in order to make possible a water-tight attachment of the material to the walls of the tooth cavity.
6. A color as far as possible similar to that of the tooth which has to be filled.
7. Absence of every noxious action upon the dental tissues, the pulp, the mucous membrane of the mouth, and general health.
8. Ease of introduction.
9. Very slight sensitiveness to moisture.
10. Adhesive force of the wall towards the dental cavity.
11. A slight antiseptic action—at all events, in its fresh condition.
12. Facility in the eventual removal of a filling.

You know, gentlemen, that not one of the known filling materials fulfils all these requirements. The ideal filling material has not yet been found, and we must, for the present, limit ourselves to the act of employing for every tooth which has to be filled the material which, according to the particular circumstance, is most to be recommended.

To-day it falls to my lot to show you the conduct of the silicate cements, and especially to lay down in what measure they fulfill Miller's requirements.

Point 1 demands sufficient hardness for the filling, so that it does not undergo any wear or alteration of shape on account of mechanical action.

I believe that most silicate cements respond absolutely to this demand of Miller. The resistance against mechanical wear is very great. With the knife, file, etc., it is much easier to injure a gold amalgam or a zinc phosphate cement filling than a silicate cement filling. For this reason, however, there is a certain brittleness in the material which does not make it suitable for every filling, and compels us to employ it with caution. It is therefore not advisable to use it for restoring the corners of incisors, or upon masticating surfaces, unless under very favorable conditions.

Whereas in point 1 perhaps all preparations of silicate cement behave in the same manner, in point 2—"Unchangeability by the fluids of the mouth and the foods which are taken"—there is an immense difference in the individual manufactures. On account of the colossal importance which attaches to the solubility or insolubility of the fillings in the mouth, we have here the deciding factor in regard to the value of silicate cements. Without doubt the action of the saliva is sometimes of a weakly alkaline and sometimes of a weakly acid nature; but it is very certain that the injuries to the fillings—as the cause of caries generally—are to be attributed to the influence of the acids which, during the fermentation of the food remnants, are formed at individual specially suitable so-called points of predilection. The conduct of silicate cement fillings against these fermentive acids, especially lactic acid, is therefore the most important factor in judging of the strength of a filling in the mouth. If we test the various preparations of silicate cement in regard to their conduct in a 2 per cent. solution of lactic acid, we obtain enormous differences. Whereas some few—really only two preparations—scarcely possess a sixth part of the solubility of the zinc phosphate cements, others are scarcely less soluble than they are, while, finally, others considerably surpass the good phosphate cements in solubility.

It is not my task to-day to give you the figures of the solubility of the individual preparations; I would, however, like to show you how to test them for yourselves. You see here a series of glass tubes filled with a 2 per cent. solution of lactic acid in which there are a few fillings of each of the silicate cements. (Demonstration.) The appearance merely will show you that in individual tubes there are already a mass of suspended particles

which have been dissolved from the filling by the lactic acid, while in other tubes this turgidity is not present. You will further here observe a number of fillings of the various preparations as they appear when dried, after twenty-four hours' immersion in the 2 per cent. lactic acid solution. (Demonstration.)

If you rub these little pellets between the fingers, you will find, in some few only, a very minute separation of loose white powder, whereas with others a great portion of the material remains on the fingers.

I carry out quantitative determinations in the following manner:—I make little pellets of the various silicate cements by kneading between the fingers, leave them for twenty-four hours in the air, weigh them, and put them for twenty-four hours into the 2 per cent. lactic acid solution. I then wash them with water, dry them for from four to five hours in the air, and again weigh them. The loss I calculate according to percentages of the substances employed. The figures giving the loss vary between 1 per cent. and 30 per cent., and are therefore so great in some cases that a third of the whole pellet is dissolved in twenty-four hours by the 2 per cent. lactic acid solution. The objection that a strong concentration of acid is not included in the mouth is self-evidently justifiable; but equally justifiable is the conclusion that a silicate cement filling which is attacked twice as powerfully by a 2 per cent. solution of lactic acid as a zinc phosphate filling, would also be sooner dissolved in a substantially weaker acid than the zinc phosphate under otherwise equal conditions.

For the chemical test the strong concentration is requisite if we are to obtain figures for comparison within a reasonable time. If we were to imitate exactly the conditions found in the mouth, we should be obliged to test for years every individual mixture which in the course of a series of experiments is produced, and we should perhaps not live to see the definite selection of the most suitable preparation. The impossibility of exactly imitating the conditions which exist in the mouth has caused Morgenstern, in his fundamental work on cements,* to lay the chief stress upon a comparison of the silicate cements with the phosphate cements which have been known for a long time, hence his results are of especial value for our purpose. A really good material is not the product of theoretical consideration alone. Theory only leads us to a particular type, from which, owing to the variety of the preparations, of the weight of the individual constituents and of the manner of mixing them, hundreds of mixtures may easily re-

*Oesterr.-ungar, Vierteljahrsschrift, October, 1905.

sult. Very energetic methods of testing are necessary in order to separate the chaff from the wheat within a reasonable time. For, in the first place, there are the tests in the mouth to be made and these, of course, require a long time. Here we are no longer in the hands of the chemist. From the series of the possible mixtures of a chosen type, some few of the demands laid down by Miller will be completely fulfilled, whereas other mixtures will possess other qualities. As, however, we cannot meet all demands, we must endeavor to extract a certain maximum from the total of the demands laid down; we must do without the less important in order to obtain something that is absolutely necessary; we must endeavor to lessen a defect in the material—if it cannot be dispensed with altogether because of more important points—in such a way that it may be so slight when we employ the material in the mouth that it will perhaps be no longer observable. I should like to mention, in this connection, that to this tacking—if I may so express myself—the varying results must likewise be referred, which you have doubtless noticed, when, on occasion, comparative results of trials have been published.

There is no silicate cement in existence which, in every possible chain of experiments, can stand first. If, therefore, a manufacturer—a thing which is said to occur sometimes—describes his preparation as the best of its class, he picks out that quality in which his product ranks first. We therefore see occasionally a chain of experiments which have reference to solubility in concentrated potash-lye or strong hydrochloric acid or similar superfluuous solutions. In any case, I recommend you to be very sceptical when you see the published results of experiments of this kind which are carried out by manufacturers or by persons connected with them. They may be correct, and yet there may not be much in them.

Point 2 of Miller's demands requires, in addition to unchangeability of the filling by the fluids of the mouth, unchangeability of the filling by the foods introduced into the mouth. To this category belong the discolorations which may be brought about by the juices of berries which are eaten. As varied as are the individual preparations of silicate cement in regard to their solubility in the acids of the mouth, so varied are they in regard to their discoloration.

You see here a series of preparations which have been exposed to the action of bilberry juice, and a series which have been laid in a weak permanganate solution. You will recognize that the greater proportion of the preparations do not meet the demand of Miller's point 2. (Demonstration.)

You will observe at the points of fracture that the coloring matter in the various preparations has entered variously deep. In a few it is only very superficial, and can easily be removed by means of brushing or polishing. The discoloration by permanganate—and I should like to bring home to you the connection between discoloration and the employment of supermanganate of potash as a mouth-wash—can be immediately removed by means of weak hydrochloric acid. Discolorations from juices and so on, however, also occur with zinc phosphate cements. At all events, you will likewise observe this discoloration on these samples of phosphate cements.

A further factor of discoloration—of course exclusively in silicate cements—arises from the employment of metal spatulas in the mixing of the mass. The sharp-edged silicate powder grinds off particles of metal from the spatula more quickly than the zinc oxide, and these enter into the filling. In the course of time these fine particles of metal are dissolved by the fluids of the mouth—that is to say, they are altered. You are aware that the employment of bone or agate spatulas in many cases excludes discoloration.

In point 3 Miller demands unchangeability of form and volume in the mouth.

Outside the mouth none of the customary preparations would entirely fulfill these conditions, since in all of them a certain amount of contraction is noticeable. This may, however, be eventually so slight that it cannot absolutely be detected in the mouth. If you press a freshly mixed silicate filling upon a glass slab, it sticks to it at first. In a few hours, sometimes only after days, the filling falls off of its own accord—due to contraction caused during the hardening process, which neutralizes the adhesion. It is true that we can entirely overcome the contraction in silicate cements. I am showing you here fillings of silicate powder which have been mixed with a phosphoric acid solution prepared for this purpose, which have now adhered to the glass slab since the 1st October, 1909. (Demonstration.) You can convince yourselves that the fillings are really firmly fixed to the slab. I will, however, at once show you why such fillings as these cannot be employed in practice. I am now putting a filling in a weak solution of lactic acid—(demonstration)—and in the course of the evening you will be able to observe that the material does not possess any great resistance to acids. Now, if it is possible, on the one hand, to prepare a material absolutely free from contraction—but otherwise unemployable—we have succeeded, on the other

hand, in lessening the contraction, in otherwise employable materials, to such an extent that we obtain in the mouth the desired unchangeability of form and volume. It is even possible to produce a filling which hardly contracts at all, and yet in regard to insolubility stands in the very first rank. Unfortunately, this filling, after the mixing, remains soft for several hours, and for this reason it cannot be employed in practice. This material, however, can sometimes be very well employed to great advantage in work outside the mouth. You will here observe a denture in which it replaces the pink rubber. (Demonstration.)

Miller's demands: 4—Bad heat-conducting property and so forth; 5—Adhesiveness; and 6—Tooth-like color, are perhaps fulfilled, in regard to the silicate cements, without limitation. Indeed, the last demand—tooth-like color—is fulfilled to such a degree by the silicate cements that no other material can compete with them, and just upon this is based their great value and their enormous popularity.

We now come to demand 7—The absence of every noxious influence upon the dental tissue, the pulp, the mucous membrane of the mouth, and the general health. However important this point may be, we know little about it. We do not know, in the first place, whether, with silicate cements, there is really any danger to the pulp; and we know still less to which constituent of these fillings the deleterious influence—if we may assume any to exist at all—is to be referred. In one preparation, particularly, the frequent appearance of pulpitis has been much talked about. While individual notable dentists like Sachs, Heitmüller, Bruck and others have inserted many fillings with the material without observing a single failure, numerous other practitioners have complained much of pulpitis after the employment of this cement.

One might be tempted to refer this symptom to the presence of arsenic in the preparation, and individual publications have given analytical proof of the presence of arsenic. I doubt whether this poison is at all present, in any considerable quantity, in silicate cements. Traces of arsenic, however, are everywhere present, so that it is difficult to obtain re-agents free from arsenic, which for tests for arsenic are, of course, necessary. You here see a so-called arsenic mirror, which is produced by a quantity of only one-hundredth of a milligramme of arsenious acid in 100 grammes of substance—(demonstration)—and you will recognize that a proof which is only afforded by such a mirror does not by a long way prove that really harmful quantities of arsenic are contained in this particular preparation. Then it has been said

that the noxious action of the silicate cements which has been observed individually is an acid action, and was based upon the fact that with a strong acid and weak base, such as aluminium oxide or beryllium oxide, a reaction can be produced, whereas in the phosphate of zinc cements the zinc oxide of a stronger base would neutralize the action of the acid.

Graebe* has laid down the proposition that a silicate cement should consist of an acid as weak as possible and a strong base powder, so that a noxious influence upon the pulp would be excluded.

The manufacturers of one of the silicate cements claim to have paid regard, in the making of their preparation, to these conditions and hence with their filling an acid action is excluded.

A little while ago, however, I was able to draw attention to the fact* that, during the mixing of this so-called "weak" acid with the so-called "high basic" powder, we are still able to recognize an acid action of the filling several days later; whereas all other silicate cements, and also the phosphate of zinc cements, under the same conditions, showed a neutral reaction after a few hours. I am putting a few fillings that were made yesterday in re-agent tubes which contain distilled water. I warm it a little, and pour the liquid upon blue litmus paper. (Demonstration.) A redding of the paper really only occurs with one preparation, and that is just the one which, according to the declaration of its manufacturers, is said to exercise absolutely no acid irritation upon the pulp.

Whether silicate cements, as such—that is to say, if they are free from every impurity and free from acid action—really act harmfully upon the pulp, has not yet been proved with certainty. For the clearing up of this question Dr. Pawel, as he personally informs me, has made experiments on dogs, which experiments were to clear up the question of the influence of strong acids, alkalies and disinfectants upon the pulp. Up to the present we only have the result so far as the action of acids enter into account. It has been found in this connection that these acids act injuriously upon the pulp, even through thick layers of dentine. Dr. Pawel has already stated that he will extend his experiments to a few cement mixtures. For this purpose I have put together a number which are chosen in such a way that after the successful conclusion of the experiments the factor which is injurious to the pulp—supposing that such a thing really exists—may be

*Deutsche Zahnarztl, Wochenschrift, 1906, page 283.

*Correspondenzblatt für Zahnärzte, 37, No. 4, 1908.

recognized. Until then I think I may recommend you, in a quite objective manner, a priori not to assume a noxious action, but in deep cavities, purely as a measure of precaution, to place an interlayer of a neutral material, such as artificial dentine, in the same way as you do when filling with phosphate of zinc cements. I assume, as a matter of course, that during the mixing of silicate cements you will not fail to add as much powder as possible to the acid, so that an acid action, as such, will be excluded.

Point 8—Easy introduction. We may absolutely answer in the affirmative.

Point 9—As little sensitiveness as possible against moisture. This demand is, of course, not fulfilled without care, but with correct work and with the customary measures of precaution it may be considered as settled.

Point 10 requires adhesive force against the wall of the tooth cavity. In referring to contraction I mentioned adhesion, but I am obliged to refer to it more fully because much has already been written on this point, and there is still much diversity of opinion regarding it. Morgenstern† says there is adhesion in silicate cements; Kulka‡ denies it; and both practitioners advance a number of reasons for their opinion. The truth perhaps lies between the two. Moreover, it is rather unimportant whether we assume the question of adhesion or not. I have already been obliged to tell you that all the silicate cements in the market, without exception, contract, even if only very little. Now, of course, a material which contracts can never adhere to a base which does not contract to the same extent. Contraction and adhesion must therefore exclude each other, let the contraction be ever so little. The absence of contraction is by far the more important point in regard to practice. A filling which does not noticeably contract lies absolutely secure in its cavity, even if it does not possess the quality of adhesion. Inversely, with adhesion alone—let it be ever so great—you could never, for any length of time, attach a corner to a tooth. I have already told you that we should perhaps be able to construct a silicate cement which exhibits no contraction at all, and which also appears to be adhesive. You here see a few pieces of ivory which have been joined together with this material, likewise this filling which has now been adhering to the glass slab for three months. (Demonstration.) I will now pull them off, warm them in water, and pour

†Oesterr, Zeitschrift f. Stomatologie, February, 1908.

‡Oesterr, Zeitschrift f. Stomatologie, March, 1908.

the water upon blue litmus paper. As you observe, reddening appears; that is to say, the acid action goes hand in hand with the adhesion, viz., with the absence of contraction. We might therefore assume that the filling is only adhesive for this reason: the reaction in it has not yet come to an end. In favor of this assumption we have the fact that when warmed—which has a hastening effect upon every reaction—the filling falls off the glass slab. I do not fail to appreciate the fact that both for the acid action and also for the falling off other grounds may be possible. Those indicated, however, are the most probable, and as long as we do not possess scientifically exact measurements we must be satisfied with them.

In phosphate of zinc cements the case stands somewhat differently. This cement filling has already been at least five years in the glass ring; it has not contracted, and is also adhesive. (Demonstration.) Notwithstanding this, however, no acid action is demonstrable. Only on boiling with water does acid reaction occur, and this is due to the hydrolytic separation of the salts.

Contraction in the best silicate cements is very slight—I should like to repeat this to ease your minds—and it will eventually be practically unfelt owing to the elasticity of the dentine and the formation of interlayers,* which occurs through the contact of the dentine with the phosphoric acid. Here you see a tooth which was filled four years ago, and a piece of ivory the filling in which is only three months old. In both fillings you can scarcely recognize any contraction; they rather give you the impression that the fillings are adhering to the walls, viz., that they are joined together by means of an interlayer. (Demonstration.)

Point 11—Slight antiseptic action. Point 12—Facility in the eventual removal of a filling. These demands are, perhaps, fulfilled in nearly all preparations, so that there is no impeding cause against the employment of silicate cements.

Now, after having considered in a general way the conduct of silicate cements in regard to the demands laid down by Miller, we may come to the following conclusions:—Silicate cements surpass the old well-known phosphate of zinc cements, firstly, in regard to their tooth-like brilliancy, transparency and color. They further surpass them in reference to their insolubility in the acids of the mouth, and they are also superior in regard to mechanical abrasion. Owing to their brittleness, their contraction, and their slight adhesive power, they are inferior to the phos-

*Kulka, Oesterr, Zeitschrift f. Stomologie, March, 1908.

phate of zinc cements in their qualities. I should like, however, to emphasize expressly that the majority, and even the most popular, of the zinc phosphate cements likewise contract, and do not adhere to a glass slab.

As regards injury to the pulp and discoloration of the filling, I do not consider it proved that a difference exists between the two kinds of cement where we are dealing with absolutely pure preparations. Both kinds of cement mutually justify their existence, and are likely to remain in existence.

The chief advantage of the silicate cements is no doubt their beautiful tooth-like brilliancy, and it is perhaps not out of place here to examine into the cause of this quality. The replacement of phosphate of zinc by aluminium or beryllium phosphate is doubtless of great influence in regard to color, but the transparent brilliancy appears to be due to the silicic acid which is separated during reaction, and to this extent the name silicate for this class of cements has its justification. I should like to show you the wonderful qualities of silicic acid on this glass slab, which is provided with a lining of silicic acid. This silicic acid is not melted, but produced by the wet process and painted upon the glass slab. You see the transparency, the brilliancy, the absolute adhesion, and the hardness, which resists the knife. (Demonstration.) Such a thing—that is to say, a covering of it over an otherwise defective phosphate or silicate cement—would be the ideal—a point which we have not yet reached. Unfortunately, this silicic acid only possesses one defect—it is soluble in water. All our trouble would be at an end if we could succeed in making this silicic acid covering insoluble without losing, by this process, its other invaluable qualities.

I promised at the beginning of the reading of my paper to spare you from the infliction of chemical formulae. I can do this the more readily since our knowledge of the chemical processes in the mixing and hardening of the silicate cements has not so far prospered as to admit of the tabulation of quantitative chemical comparisons of reaction. The mere supposition that the phosphoric acid binds the alumina or the beryl earth by the separation of silicic acid and reproduces the true processes, is only supposition. As you are aware, we know various phosphoric acids, and each of these may form, with the individual bases, a long series of various acid, neutral, and especially basic salts. In addition to this, it must be stated that in the usual cement liquids phosphoric acid is regularly bound in part to the bases, as, for example, oxide of zinc, magnesium, alumina, and so forth, and

that it sometimes also contains other materials. In regard to the silicate cement powders, however, there is yet a still greater variety of possibilities. The number of aluminium silicates which occur in nature is very great. The mere knowledge of their constitution teaches us very little here. I know this especially of my own manufacture, for, as the result of systematic study and trials extending over several years, as I have previously indicated, I have found it necessary to mix several aluminium silicates with each other, such as have been produced partly by the wet process and partly fused in the furnace. This variety of manufacture, which perhaps necessitates a different constitution of the silicates, will naturally, through the mixing with phosphoric acid, be of great influence in regard to the nature and the result of the reaction. It is, therefore, not possible to formulate, even approximately correctly, the chemical process. A quite superficial calculation shows that in the quantity of powder which as a rule we add—both in the mixing of phosphate of zinc cements and also of the silicate cements—to the quantity of acid, at least double the quantity of base is used than would be necessary for the simplest case of a neutral salt of orthophosphoric acid. There is, therefore, present a great surplus of base, so that a lasting acid action upon the pulp is not possible. All the same, it must always be emphasized that silicate cements must be mixed thick, while, for instance, for the solubility of phosphate cements in weak lactic acid it does not matter whether we mix the filling thick or thin. This factor plays a great role in the solubility of all silicate cements, and perhaps accounts for the failure of many a practitioner who tried to work the silicate cements in the same way as the phosphate of zinc cements, with the result that the failures are falsely attributed to the material. Every effort of the chemist, who from hundreds of variations has searched out the most suitable mixture, is in vain, if the dentist arbitrarily changes some of the conditions which are brought into equilibrium by the chemical system which has been placed in his hands. A successful result is only possible when the dentist and the chemist work hand in hand, and I shall rejoice if my explanations contribute to smooth the way for a more intimate working together of the two.

Our Model Operating Room

Will give you some fine ideas in office equipment and decoration. If you are in Toronto it will pay you to call and inspect the best Model Room in Canada.

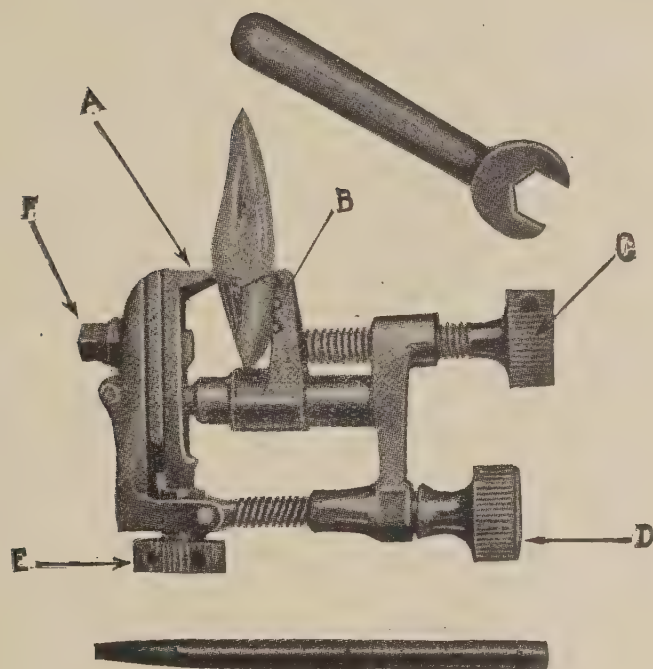
Second-Hand Goods

1	Ritter All Cord Engine Wall Type, 110 Volts, Direct, Nearly New, A 1 Condition	\$75 00
1	Ritter Cable Engine, 110 Volts, Direct Current, Fair Condition.....	40 00
1	Ritter Overhead Cable Type Engine. 110 Volts, Direct Current, Excellent Condition	65 00
1	Betz Electric Engine, Overhead All Cord Type, 110 Volts, 60 Cycles, Alternating Current, in Perfect Order.....	46 00
1	Columbia Chair, Leather, Perfect Condition, New....	100 00
6	Elgin Casting Machines, No. 2, Good as New, each.	25 00
1	Davis Gasometer, less Face Piece and Tubing, Excellent Condition.....	18 00
1	Pelton No. 1 Furnace with Pyrometer, A 1 Condition	65 00
1	Harvard Chair, Oil Pump, Disk Base, Newly Upholstered in Leather, A 1 Condition	70 00
1	Gould Chair.....	35 00

Mosley Crown Remover

An Ideal Appliance for Removing
Crowns from Roots.

Registered.



Natural Size.

The Mosley Crown Remover is the only instrument yet devised for removing Dowel Crowns from the mouth. Its primary object is to remove these crowns without in any way injuring the root. This is accomplished quickly and painlessly. In most cases the crown remains uninjured and can be used again if desirable.

- | | |
|------------------|----------------|
| A. Wedge Tongues | D. Thumb Screw |
| B. Vice Jaw | E. Thumb Screw |
| C. Thumb Screw | F. Jam Nut |

Complete directions with each Remover.

PRICE . . \$5.50

IN putting into force on March 1st a new and reduced schedule of prices for DENTAL RUBBERS, we are following as closely as possible the retail price governing in London, adding the Canadian duty and a slight fraction for transportation. By a close examination of the new schedule, you will see a distinct reduction in most of our Base Rubbers, and if you will further compare them with the prices of other makes of rubbers, you will find a great saving will be effected by using **Ash's Vulcanizing Rubbers**. We have led the world for many years in the manufacture of Dental Rubbers, and to-day the product is distinctly in advance and superior to any other rubbers at present upon the market.

ASH'S GUM PINK LIGHT RUBBER

has never been successfully imitated, and no other pink gives so close a reproduction of the natural gum.

Do not be content to take some other brand that a salesman tells you is just as good as Ash's.

For prices and quantity rates see next page.

Ash's Dental Rubbers

From March 1st the following prices will apply on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.40	\$5.00	\$4.75
No. 1X Pink, Medium.....				
No. 1 Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....				
No. 2X Pink, Medium.....	5.00	4.50	4.25	4.00
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

Improved Black.....	4.25	3.80
Combination		
White for Side Blocks, etc.....		
Child's "G"		
A. E. Elastic, Dark Brown		
W. Elastic, Dark Brown.....	3.75	3.35
Whalebone No. 1, Dark Brown.....		
Whalebone No. 2, Light Brown.....		
Solid Base	3.50	3.15
Dark Red.....		
Flexible Base.....		
Dark Elastic.....		
Maroon.....		
Red.....	2.75	2.45
Orange.....		
Dark Brown.....		
Brown.....		
English Base.....		

SPECIAL—FOR TENDER GUMS, ETC.

	Degrees Fahrenheit	Time H. M.	lb.
Soft Pink, for lining Palates.....	310	1 15	\$6.00
Soft Dark Red.....	310	1 15	4.25
Vela for Artificial Palates.....	270	6 0	6.00
Brown Weighted.....			4.75
Pink Weighted.....			6.00
Brown Repairing.....			4.75
Pink Repairing.....			6.00

NOTE.—Cash Discounts do not apply on quantity rates on our Coating Rubbers in any quantity over 5 lbs.

Ash's Dental Rubbers

UNAPPROACHED FOR

**Excellency, Purity, Strength, Elasticity
and Density.**

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



in addition to the name of the Rubber.

Always ask for ASH'S when ordering Dental Rubbers.

For full list of our Dental Rubbers showing NEW and REDUCED prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we give full **16 OUNCES** of Rubber **TO THE POUND**, exclusive of the linen backing. We have also stated that **MOST** American manufacturers **DO NOT** give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?

If You Want to Insure Success

In the Casting of Gold Inlays and Gold and
Aluminum Dentures use

Solbrig's Embedding Material

The great amount of research work done by M. O. SOLBRIG, L.D.S. of Paris, has among other valuable results, given us the ideal in Investments. In the Embedding of large cases the most frequent cause of failure is through inability to properly surround the model, feeling certain that no air bubbles exist. Solbrig Embedding Material is mixed and poured like cream, giving absolute certainty of perfectly surrounding the model. The total absence of shrinking and cracking will delight you. It is a very open porous material, and allows a free escape of air from the mould.

Tin containing 7 lbs - 80 Cents

Tin containing 28 lbs. - \$3.50

HAVE YOU EVER

Examined the quality of your cast inlays, bridges, or cast Aluminum dentures when made by any other method than super-heated steam?

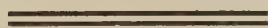
We would like the opportunity to demonstrate this important point to you.

The Solbrig-Platschik Press

Gives you cast gold and Aluminum of the texture of the beaten metal. No Brittleness. No pitting of Aluminum.

Write us for information; it will cheerfully be given.

What You Have So Often Asked For.



**A POPULAR TEMPORARY STOPPING
30 Cents a Box.**

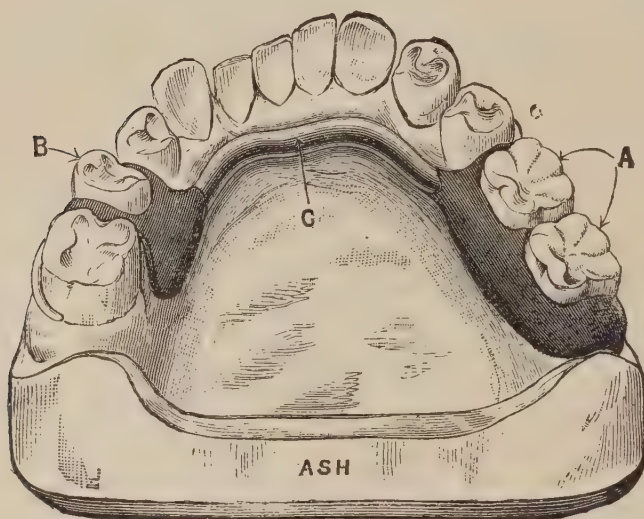
It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50.**

SEND US AN ORDER NOW

Ash's Popular Stopping

ASH'S OVAL GOLD CASED WIRE For Bar Lowers



Bar Lower Dentures have come into universal demand. **Note** some of their advantages.

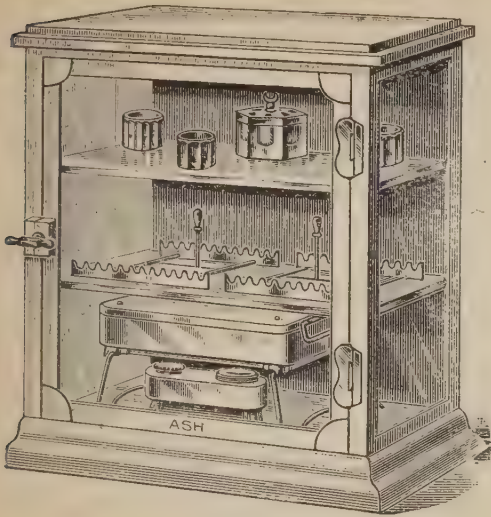
No tendency to push teeth outwards.

Greater cleanliness.

Less bulk.

Greater rigidity.

Per dwt. \$.40



ASH'S No. 4 ASEPTIC CABINET

With Metal Back and Metal Frame Enamelled White; Glass Front and Sides and two Plate Glass Shelves.

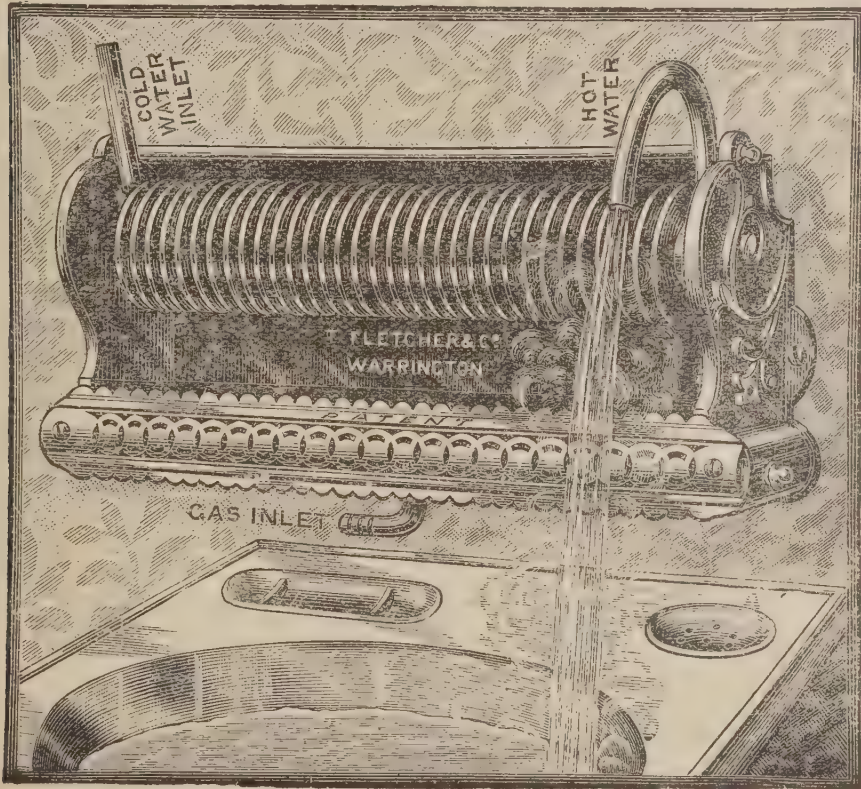
Dimensions: 17 in. high, 12 in. wide, 8 in. deep.

From these measurements it will be seen that this Cabinet is a convenient size for standing on a mantelpiece, an ordinary shelf, or a table. It is of British manufacture, strongly made, and well finished. It will hold a good number of instruments and sundries.

Price, empty - - - - - \$12.00

With word "Sterilizer" in gold \$13.00

INSTANTANEOUS WATER HEATER



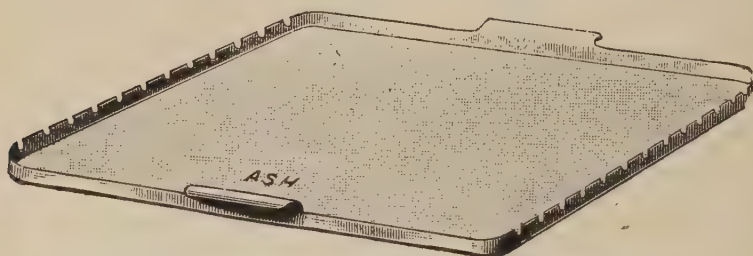
Gives a steady stream of nearly boiling water. A $\frac{3}{8}$ -inch clear bore gas supply is sufficient for the heater.

Price - - \$11.50 + Price, N.P. - - - \$14.00

ASEPTIC METAL TRAY

WHITE ENAMELLED

For the top of **Allan's Bracket Table**, with the rim on two sides corrugated.



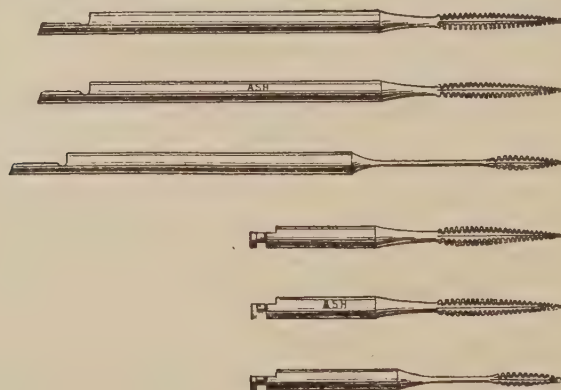
12 $\frac{3}{8}$ inches square, outside measurement.

The enamel on this Aseptic Tray is fired on the metal, like the enamel on enamelled signs and domestic utensils, and is proof against the action of any drug or acid which is used in the operating room, except fluoric acid.

The possession of two or more trays admits of a clean one being used for each patient, and the sight of a fresh tray is pleasing evidence to the patient of the care of the operator.

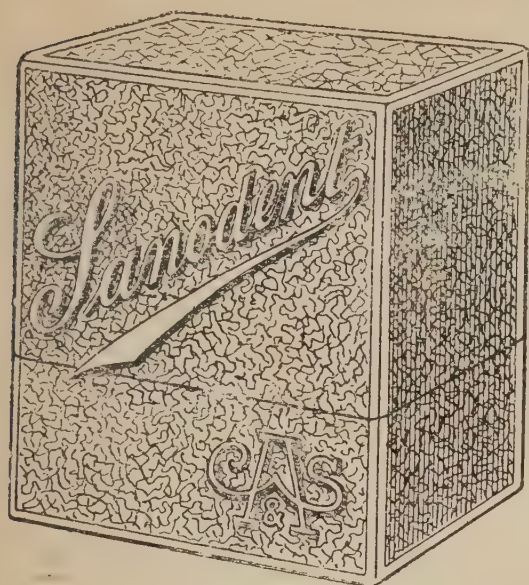
Price, as illustrated - - - - - each \$2.00

GOODHUGH ROOT BURS



A new Cross-cut Root Bur, ideal in shape and of Ash Quality.
For either No. 7 Hand Piece or No. 2 Right Angle.

Price, each - - - - - 25 Cents



Sanodent

(Registered)

A Superior Root Dressing

FROM THE FORMULA OF
MR. C. R. FITCH, L.D.S., Eng.

Sanodent has been regularly used and well tested for nearly four years with the most satisfactory results, hence it is offered to the Profession as a thoroughly reliable preparation

DIRECTIONS FOR USE.

AS A DRESSING FOR SEPTIC OR ABSCESSED TEETH.—Thoroughly clean out the contents of the Pulp Chamber and Root Canals in the usual manner. Mix the Sanodent Powder and Liquid to the consistency of thick cream and apply on Cotton Wool to the Root Canals and Pulp Chamber. Repeat these dressings until the tooth is perfectly "sweet." Then permanently fill the Canals with either Asbestos Fibre, Gutta Percha Points, or Cotton-Wool covered with Sanodent mixed to a fairly thick paste.

In very septic teeth, which at the time of treatment are not abscessed, it is advisable at the first to clear out the contents of the Pulp Chamber only, apply a dressing of Sanodent, and leave the treatment of the Canals until a subsequent visit, when their contents will be far less septic.

SOME OTHER USES.—In those cases in which for some reason or other (*e.g.*, Tortuous Canals), it is impossible to clear out the Canals thoroughly, cover the orifices of these Canals with Sanodent mixed to a paste, and carried to place on Asbestos Fibre or Cotton Wool. Any remaining Pulp will be preserved in an antiseptic condition.

As a "Mummifying" agent, those who practice "Mummification of the Pulp" will find Sanodent excellent. Subsequent to devitalising and removing the coronal portion of the Pulp, apply Sanodent, mixed to a paste, on either Asbestos Fibre or Cotton Wool.

After the application of Arsenic, a dressing of Sanodent left on for a day, prior to attempting the removal of the Pulp, will render the Pulp tough and thus admit of its being much more easily removed whole from the Canals.

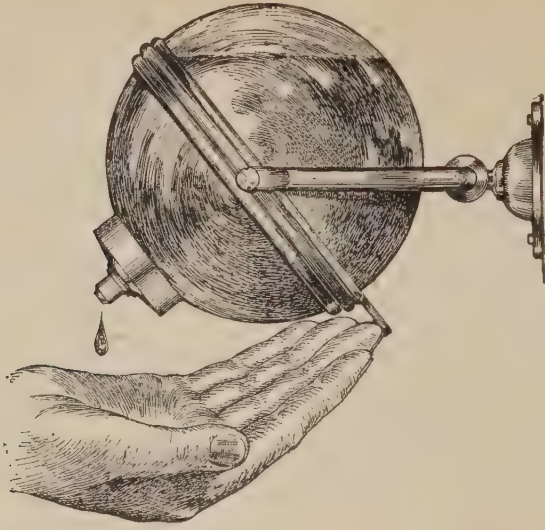
Sanodent is very useful as a permanent Root-Canal Filling when it is mixed to a paste and used in conjunction with Asbestos Fibre, Gutta-Percha Points, or Cotton-Wool.

N.B.—Do not force Sanodent through Apical Foramina, and do not seal it in contract with living tissue, either pulp or gum. Sanodent is not intended to replace proper Root Treatment, but to aid it.

Sanodent is supplied in stoppered bottles. The bottles should be kept well close when they are not in use. After exposure to light and air the liquid becomes somewhat darker in color than as supplied, but this is no detriment to it, and in no way affects its efficacy.

Sanodent Powder and Liquid in Packets, per packet.....\$1 25

NOTE.—We have a limited number of free samples of *Sanodent* left. Applications for these will be filled in strict order so long as the supply holds out.



THE ONLY ASEPTIC WAY OF USING SOAP

Is by means of the BEAU BRUMMEL LIQUID SOAP DISPENSER, the only mechanically-perfect, successful device which furnishes a measured quantity of absolutely uncontaminated soap from a practically air-tight dispenser, each time it is used.

Embellishes the washstands, eliminates soap waste and mussy soap dishes. Requires no care and attention.

As for the soap itself, we have perfected practically a neutral soap, which being prepared from pure vegetable oils, is the purest form of soap that can be had, free from acids, animal fats and tallow, and it is not only a better detergent and cleanser than cake soap, but is an emolient to the skin, refreshing, stimulating and invigorating.

The Beau Brummel Liquid Soap System is the only one whereby the Dentist can assure absolute asepsis in using soap, in his offices.

PRICES:	Holder	-	-	-	-	\$3 25
	Soap, per Quart	-	-	-	-	1 75
	Soap, per Gallon	-	-	-	-	4 25

CHARLES L. DALY

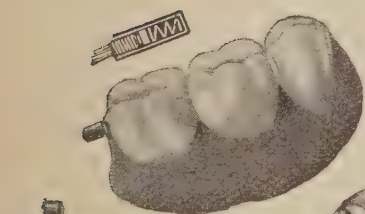
The X. L. C. R. Dental Laboratory

Since Mr. Daly has returned from New York he is prepared to execute with the greatest satisfaction some of the more difficult classes of work in the field of Mechanical Dentistry. In addition to standard work he has specialized in

Continuous Gum Work

and

Bennett's Removable Bridges



The accompanying illustrations show the Bennett attachment and its great field of usefulness.



Send us your next order—It will be promptly and carefully executed.

X.L.C.R. DENTAL LABORATORY

2 College Street, Toronto

OUR PYORRHEA CLINICS

prove that "Dentinol" and "Pyorrhocide" used in conjunction with scaling produce results in the treatment of Pyorrhea, Gingivitis, spongy and bleeding gums that are UNEQUALLED.

WE TREAT CASES PRESENTED BY DENTISTS ONLY and COMPLETE CASES without expense to Dentist or Patient. Our Clinics are open to ALL DENTISTS during ALL TREATMENTS. That old notion about "patients not wanting to pay for treatment," is knocked sky high when you show them RESULTS. Rich and poor alike are wonderfully appreciative.

OUR CLINICIANS USE

The Improved Dentinol Pyorrhea Scalers

(Set of 12) \$9.00.

By the use of which the removal of all deposits is simplified
Full directions for using each instrument enclosed.

The Dentinol Perfect Syringe

Ground glass barrel and plunger (no packings) flat tipped platinum iridium point.

Dentinol

2 oz. bottle (Flooded into pocket with syringe). \$1.00

Pyorrhocide

4 oz. can (used by patient as a Dentifrice) \$9.00 per doz.

Pyorrhocide is a powerful antiseptic, medicated, prophylactic Dentrifrice and is the best for GENERAL USE in that the use of it maintains hygienic conditions in the oral cavity, thoroughly cleans the teeth, and PREVENTS PYORRHEA.

Sold through all Dental Supply Houses.

Literature mailed free on application to,

The Dentinol and Pyorrhocide Co.
1 Union Square, New York City

Trigger's Universal Tooth Swage



Patented March 29, 1910

A simple little device made of soft rubber, and intended for backing flat-back teeth. It will accommodate practically any tooth made. The mold is shaped to conform to the tooth, and the pin grooves are designed to take the longest pins found in flat-back teeth.

Punch the backing for the passage of the pins, pass the tooth with backing in position, lengthwise into the swage, allowing the pins to enter the grooves. Hold the swage between the thumb and finger and strike it with a hammer.

If the tooth is extra long, swage one end up to the pins, then turn it about and swage the other end.

Should the pins be placed too closely together to enter the grooves, the tooth can be entered side-wise and swaged.

PRICE: Trigger's Universal Swage, by Mail, 45c.

YOUR DEALER OR DIRECT

TWO OUNCES IN TWO MINUTES

No. 8-D Melting Arrangement, using illuminating gas, will melt up to two ounces Gold or Silver scrap in the shallow carbon crucible and run it into the ingot mould in two minutes from the time gas is lighted.

Waste heat brings ingot mould up to the proper temperature, and tilting the entire arrangement, runs a sound ingot of any width up to $1\frac{5}{8}$ inches by 2 inches long by 3-16 inch thick.

Price, \$3.90. All Dealers

B. D. M. Co.'s Foot Blower furnishes the necessary blast. Ask us to send catalogue "D" and give you information concerning Melting Arrangements.



BUFFALO DENTAL MANUFACTURING CO.

BUFFALO, N.Y., U.S.A.

Spurge's Nitrous Oxide

**With High Class Apparatus
for Administering.**

We have in response to different calls, put in stock a supply of SPURGE'S celebrated Gas and Cylinders.

These are best available and will give you comfort and satisfaction that others cannot.

WE HAVE ALSO PLACED IN STOCK

Weller's Nitrous Oxide and Oxygen Apparatus.

Weller's Regulator Stand with Foot Control.

The Celebrated No. 4 Nasal Apparatus, with Regulator Stand and Foot Control.

**These Appliances are the Finest Ever Shown
in Canada.**

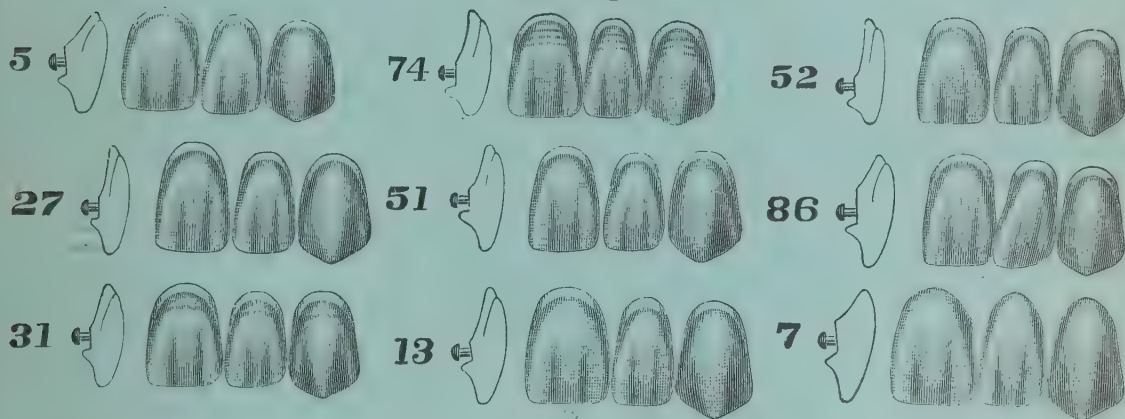
If you are interested in Nitrous Oxide, it will pay you to inspect these goods or drop us a line asking for further information. It will be cheerfully supplied.

UNIVERSAL TEETH

SMALL



MEDIUM



The Most Useful Stock of Teeth for a Dentist to Carry on Hand

It will be observed from the illustrations that there are no extreme sizes. Two of the molds (56 and 86) have lapping laterals and two (52 and 74) have short bites. The balance have medium bites. The shades usually furnished are 6 or 8 of the best medium tints. These are supplied in combination sets, Platinum Pin, or Metalite, Teeth.

PRICES BEING :

Combination Sets of 14	-	-	\$1.46 Each
Platinum Pin Sets of 14	-	-	2.66 "
Metalite Sets of 14	-	-	1.00 "

(1x14 \$1.00, 11x14 \$10.00, 28x14 \$.00, 58x14 \$50.00, 120x14 \$100.00.)

In \$100.00 lots we allow a discount of **10%** for cash and by the deposit of \$90.00 you can obtain \$100.00 worth of teeth to be delivered to you as wanted.

For years we have been making up for our customers, selections of teeth composed of these molds. By the test of time they have proven themselves to be universal sizes constantly in demand. With a stock of these popular sizes in the office most dentists will be surprised to find how fast they are used and how often the stock needs replenishing.

CONSOLIDATED  DENTAL MFG. CO.

NEW YORK
BOSTON

CHICAGO
DETROIT

PHILADELPHIA
CLEVELAND

Ash's Dowel Crowns

If you have not figured out this
Crown proposition, **Do it now!**

The price is right, but it is not only the price that appeals to so many dentists, as the mould and texture of these teeth.

A leading dentist wrote us in February as follows :—

"I see by your advertisement that you have Dowel Crowns in shapes that I have been looking for for some time with negative results, and I am glad to see that you are placing them on the market."

This is only just one of a great many voluntary letters written to us regarding these crowns.

The moulds are exceptional and are adapted to all cases in the human mouth. The texture and strength are unsurpassed by any crown on the market to-day.

The sale that these crowns have enjoyed since they were freely placed on the market has been greater than had been anticipated, and we are selling many thousands of them each week. The scale of prices given below will more than interest you. We would draw your attention to the shape of the pins for these crowns, which have been most favourably received.

Single Crowns	12c. each
100 Crowns.....	\$10 00
500 Crowns.....	47 00
1000 Crowns.....	90 00
Dental Alloy Pins, Single.....	25c. each
Dental Alloy Pins, Bifurcated.....	35c. each
Base Metal Roughened Pin, New Style...	5c. each

Above prices subject to 5% cash if purchase amounts to \$25.00 or over. Compare these prices with rates charged for other crowns. You will be surprised at the saving to be had by using Ash's Crowns.

CLAUDIUS ASH, SONS & CO., Limited

11-13 Grenville Street, TORONTO ONT,

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

MAY, 1911

No. 8

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On Prophylaxis in the Field of Odontology.

Second-Hand Goods.

Advertising Section.

New Goods and Novelties.

CLAUDIUS ASH, SONS & CO., Limited

5-12 Broad Street, Golden Square

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CHRISTIANIA, Tordenkjoldsgade, 9

STOCKHOLM, Malmskilnadsgatan, 44

ST. PETERSBURG, 21 Gogolstr

MOSCOW, Kusnetzki Pereulok, 3

NEW YORK, 30 East Fourteenth St,

TORONTO, 11 and 13 Grenville Street

ALEXANDRIA, Trieste St. No. 1

CAIRO, 4 Taher Street, Opera Square

BRESLAU, Gartenstrasse, 22

WHEN WE PLACED ON THE MARKET

Ash's Popular Alloy

We knew there would be a large demand for it. The first month's sale has been far and away beyond our expectations.

Ask our travellers how their customers who are using it appreciate it.

**It is the Best Low Priced
Alloy on the Market**

SEND US A MAIL ORDER NOW

Ash's Popular Amalgam

**\$1.00 Per Ounce
5 Ounces for \$4.50**

Ash's Canadian Monthly Circular

VOL. I.

TORONTO, MAY 1, 1911

No. 5

ON PROPHYLAXIS IN THE FIELD OF ODONTOLOGY.

By Professor Matti Ayrapaa, of Helsingfors, Finland.

When we are attacked by an internal disease, we are rarely able to indicate exactly when and whence the disease germ entered the body. When the disease is diagnosed it has already advanced, as a rule, to such an extent that its development can no longer be impeded—at all events, not completely. “In the same way as misfortune, disease does not approach us with bells round its neck,” as a Finnish proverb has it. It is different, however, in most cases with regard to dental diseases. The decay of teeth can be observed very early. It appears on the surface of the tooth as a small speck, which, in the course of months, or even years, gradually extends and penetrates deeper and deeper until it reaches the dental pulp and commences to cause pain. Dental decay, therefore, does proceed, as it were, with bells round its neck. Why do we not take notice in time of this warning voice of nature? Why do we not see it, although the danger is distinctly to be observed? The cause of it is partly ignorance, and partly indifference or want of means.

The modern dentist is obliged to give the greatest attention to these circumstances, viz., that dental decay, in consequence of ignorance or incapacity, has spread to a very great extent, although prophylactic treatment, rigidly carried out, might have been able to arrest its progress. It is not sufficient for us to treat diseased teeth and to construct artificial ones cleverly; we serve mankind far better if we are able to prevent the occurrence and the spread of diseases.

Let us take an example: When an epidemic of malaria breaks out, we are able, it is true, to cure those attacked by means of large doses of quinine; the disease, however, spreads all the same. If we explain to the public that the malaria plasmodium is developed in the salivary gland of a species of fly (*Anopheles*) and that through the bite of this fly it reaches the blood of man, we teach mankind to avoid the source of the disease itself, and thus accomplish a far greater work than by the treatment of individual cases of disease.

Now, let us glance at tuberculosis: In the small dwelling houses of workmen in the country and in towns the healthy and sick live together. They spit upon the floor, and the dried-up sputa, filled with the bacilla of tuberculosis, are stirred up with the broom, rise into the air, and are directly inhaled into the lungs; or the little children crawl about upon the floor and make their fingers dirty with the expectorations of the sick; thus the bacilli penetrate into the mouth and from thence into the alimentary canal, or attach themselves to the mucous membrane of the mouth, or enter the cavities of hollow teeth, there to develop and multiply, in readiness to penetrate, at the first favorable opportunity, into the lymphatic system or into other tissues, and to begin their work of destruction. It has been calculated that in Finland we have at least forty thousand people affected with tuberculosis, of whom eight thousand five hundred die annually. How many of these have been infected through the mucous membrane of the mouth or through the teeth it is impossible to decide, but we should think that the percentage would not be slight when we remember that, according to a statistical table put together by one of our dentists some ten years ago, about 92 per cent. of the school children possessed defective teeth, that 60 per cent. of them suffered from swollen lymphatic glands, from the size of a pea up to a hen's egg, and that these swollen glands were always found upon the same side of the mouth as the diseased teeth. These pathological alterations may often be caused through the bacilli of tuberculosis. If we consider the large number of sufferers, what is the value of a few sanatoria which contain, perhaps, 200 patients, even if from 60 per cent. to 70 per cent. of these should recover? And yet, looked at from the prophylactic point of view, they are of the greatest importance. The patients learn in these institutions how their disease is treated, how its transmission from one to another can be prevented, and they spread this knowledge throughout the land. Let us assume, for instance, that the number of patients amounts to 200, and is renewed three times a year. This means that 600 patients are annually treated in the sanatoria. Let us further assume that every one of these 600 patients tells twenty acquaintances of the treatment, etc. Within a

year, 12,000 persons thus become partners in this knowledge, and they, on their part, spread it, while new patients are taken into the sanatoria and in due course dismissed. In this way the knowledge, so important in the treatment of tuberculosis, is spread unceasingly among the people.

To the extent that science becomes clear in regard to the etiology of other diseases, it is the bounden duty of the physician to make known to the people the knowledge of suitable prophylaxis based upon this etiology. Let us, from this standpoint, touch in a few words upon lues, a disease the excitant of which, in all probability, is a spirillum (*Spirochaeta pallida*), which also frequently occurs in the mouths of patients. It is our duty, as dentists, to recognize the forms of this disease which appear in the mouth, so that we may be on our guard, not only for our own personal safety, but also for the safety of our patients, and that we may not transmit the disease to others with our instruments or by our hands. In connection with this disease we are often able to prevent the occurrence of certain complications. I mean the so-called stomatites. During the anti-syphilitic treatment it is extremely important to keep the mouth and the hands clean. In regard to this I cannot forget the advice of old Siegmund v. Illanor. He, if I am not mistaken, died at the age of 80, and was able to deal with this disease through several generations. He expresses himself in one of his last works to the effect that in his private practice he should only be carrying out a superficial cure unless the patients had previously visited a dentist, whose duty it was to cleanse their teeth carefully, to remove all roots and teeth which could no longer be filled, to fill defective teeth, and to replace those which were missing with new ones. This man, in his time one of the greatest specialists of the world, therefore, held healthy views in regard to the prophylaxis of mercurialism, which we dentists must support with our fullest conviction. What Siegmund demanded from his rich private patients surely the awakening public authorities will demand from their clinical patients, by appointing special dentists whose duty it will be to treat the teeth of patients, free of charge, in the hospitals, and particularly in the syphilitic wards.

In regard to the remaining infectious diseases, we must remember that many excitants of disease live in the mucous membrane of the mouth and in the teeth, and are capable of multiplication before entering into the body—for instance, diphtheria, pneumonia, typhus and cholera bacilli. Not only at the commencement of the disease, but also at its conclusion, when the patient has looked upon himself as restored for a long time, germs of disease may be met with in the mouth which are completely virulent and capable of

transmitting disease. It is self-evident how important the cleansing of the teeth is during such epidemics, in regard to prophylaxis.

It has been observed that the Löffler bacillus (diphtheria bacillus) may still be found in the mouth from ten to forty days after the deposits of skin have peeled off.

Sometimes an epidemic of diphtheria may entirely run its course without symptoms of disease. Thus Eric Müller cites a case from a Children's Home where, after all the children had been examined, a Löffler bacillus was found in a child which had been admitted shortly before, without the child feeling ill in any way whatever. On the following day the bacillus was found in a few other children, in every case in the children whose beds were nearest to that of the affected child. After a few days the bacillus was spread to all the forty children who slept in the same dormitory. The bacilli, however, produced no disturbances or symptoms of disease.

I will mention another disease for which we dentists must keep a sharp look-out when it occurs in our surroundings, viz., measles. Here we can likewise be useful in a prophylactic sense. To the symptoms of this disease, before the others have appeared, belong the so-called "Koplik's signs." They are small red specks, with a bluish-white point in the centre, which appear on the inner side of the cheeks and lips. These specks occur before the disease has become infectious. If, therefore, during the treatment of the teeth of a child we find these Koplik's signs, it is our duty to demand that the child in question shall be separated from the other children in the family; we can thus with great certainty avoid the spread of the epidemic, at all events, in this individual family.

Now, if we look more closely at the prophylaxis of the real dental diseases, the most important which first meets us is the decay of the teeth—Caries dentium.

In the study of the prophylaxis of dental decay we must first be clear in our mind how nature seeks to protect itself against this disease. Among civilized peoples it has spread to a very high degree, so that we only rarely find a person whose whole set of teeth is sound. Among the youth of our schools we have more than 92 per cent. of bad teeth, and in Europe there are places where this percentage rises to 100; that is to say, every individual is affected to a more or less extent with dental decay. There are, however, peoples in which this disease occurs comparatively rarely. Among our Laplanders it hardly exists at all, if we may judge by the great collection of crania in the possession of the Finnish University. Nature seems, therefore, to have means at its disposal for resisting this disease.

When we look at the skulls of the Laplanders, we are surprised to find that the teeth are worn away to a great degree, often up to the neck of the tooth. In such skulls as those in which the deciduous teeth are still present, therefore in the skulls of children, we also find the same conditions; the teeth are worn away up to the gum. As we know, the Laplanders, during the greater part of the year, live chiefly on dried reindeer flesh, which, as it is hard and tough, they are obliged to gnaw away and tear off from the bones.

Furthermore, Mummery, on the basis of comparative studies in the collections of skulls of various museums, has tabulated statistics in regard to the spread of dental decay in various peoples. He found that caries occurred among the Eskimos only to the extent of 1 per cent., among the Indians from 3 to 10 per cent., in the Malays 3 to 20 per cent., in the Chinese 40 per cent., and in Europeans 80 to 98 per cent. In addition to this, Mummery speaks of a people who are a mixture of Spaniards and Indians—viz., the Gauchos, of the pampas of South America—who live exclusively by raising cattle. Their chief nutriment consists of meat which they roast over a fire and tear from the bones with the teeth. Among these people a dental decay is said to be almost unknown, although as descendants of Indians they should have from 3 to 10 per cent., and as descendants of Spaniards at least 80 per cent., of caries. If these statements are reliable, they point to the fact that the teeth, even if, as among the Europeans, they have degenerated, may be improved in later generations if the conditions of life become more favorable.

What are the most suitable conditions of life under which we are able to cause progress of caries to decrease? In other words, what is the prophylaxis of nature against caries? It is work.

Only by means of work are we able to strengthen the corporeal organs. Athletes and workmen gain powerful muscles, and, inversely, if we do not exercise our organs, they become stunted and degenerated. If, for example, the arm of a child has been injured, and has been borne idly in a sling for a few weeks, it will be backward in development; the other arm will be stronger and more developed, not only because it is more healthy, but because the child has been able to move and exercise it. In the Bible we read: "In the sweat of thy brow shalt thou eat bread"—that is to say, by performing heavy work. This heavy work is not to be taken to mean collectively; it has reference to every bodily organ by itself. The condition of the entire organic life is work. Non-use produces degeneration both of the entire organism and also of the individual organs. All organs must perform a certain work; the heart works, the lungs work, every blood-cell is in diligent activity. The teeth

of man also degenerate when the accomplishment of their work is left to a great extent to male and female cooks; their power of resistance decreases, they fall a prey to dental decay, and dental decay is a wound on the human body—a gaping wound which nature cannot cicatrise or heal like other wounds, but which becomes unceasingly greater, and holds the doors open through which all kinds of bacilli and disease germs penetrate into the body, there to perform their work of destruction.

How are we to understand that work in itself will preserve the teeth from decay?

The work of the teeth consists of mastication, and powerful mastication brings with it two important components—the cleansing of the teeth and the increase of the activity of the glands, especially the salivary glands.

During mastication, particularly of hard nutriment, the teeth are better cleansed mechanically than with any tooth-brush whatsoever, and the glands secrete profuse saliva and mucus. Should remnants of food remain between the teeth or in the natural depressions of the teeth, the mucus secreted by the mucus membrane glands makes them slippery, so that the saliva pouring profusely from the salivary glands is able to carry them away; and should smaller remnants of food remain for a longer time between the teeth and ferment, the alkaline saliva neutralizes the acid (lactic acid) which is formed during fermentation.

How important strong alkaline saliva is for the protection of the teeth against the deleterious influence of the lactic which is formed in the mouth is proved by the experiments recently carried out by Head. He placed sections of teeth in a weak solution of lactic (one part lactic acid to 500 parts of water). The sections were dissolved after a few minutes. When, however, in lieu of water, he employed saliva—that is to say, one part of lactic acid to 500 parts of saliva—the sections remained unaltered for weeks.

The protecting power of the saliva does not, therefore, lie in its antiseptic qualities. Its capacity for killing micro-organisms seems to be very slight, if it exists at all. We know that even in a healthy mouth great masses of bacteria live, and that their number is incalculable when the gum and the teeth are diseased. The saliva does not kill them, for among them there are no doubt also useful species, although we do not know them or their functions with exactness, but the saliva lessens and neutralizes the damage which the products of the bacteria are able to produce.

The protective action of the saliva is probably still more extensive. The serum theory, with its new method of viewing things, its

new materials, its toxins and anti-toxins, precipitants, agglutines, alexines, complements, aggressines, opsonines, and so forth, will no doubt discover new fields, in regard to the saliva, and afford us a glimpse into the secret workshops in which nature produces its means of defence in the battle for life. And in this battle, judging from all we know, there will be a large number of species of bacteria which are our allies, even if others are, and will remain, our irreconcilable enemies. When we speak of the prophylactic means of nature itself in its fight against dental diseases, we must on no account forget the activity of the tooth marrow—the pulp. If we come back again to the skulls of the Laplanders, previously mentioned, we shall remember that their teeth were often worn away up to the gum. In such cases we might fear exposure of the pulp cavity, since the entire upper part of the tooth, and even more, has disappeared. This, however, is not so. To the extent to which a portion of the tooth is worn away the pulp builds up new dentine—the so-called protective dentine—against the threatening danger. In the same manner the pulp seeks to battle against the commencing dental decay. As soon as the decay has obtained a secure hold in the tooth and has commenced to send out its precursors—that is to say, its toxins—along the dentinal canals in the direction of the pulp, the pulp likewise commences to be extensively active. It decreases the number of dentinal canals which, in healthy teeth, run in dense numbers from the periphery towards the pulp, and only leaves the hard basal substance, which the bacilli have to dissolve before they are able to penetrate further forward. At the same time the pulp builds new dentine—protective dentine—between itself and the threatening dental decay, just in the same manner as it builds against wearing away. It erects walls or barricades against the numerous troops of enemies—the bacteria—as one does during war; and, what is more wonderful still, it builds in this protective dentine only few dentinal canals, and these run crookedly and zig-zag, so that the bacteria and their poisons find it difficult to penetrate along them. How this battle finally ends, however, the present generation knows only too well. The resisting power of the pulp decreases, and if dental aid is not called in betimes, the tooth is doomed to destruction. Nature's own prophylactic means against dental decay are, therefore, first, work, or powerful mastication, and from this consequent cleansing of the teeth and a profuse exudation of alkaline saliva, also the activity of the dental pulp, or its ability to form between itself and the approaching dental decay new protective dentine.

By work—that is to say, by means of powerful mastication—the maxillary bones, masticatory muscles, teeth, lips and laryngeal

muscles are strengthened, and the blood current becomes stimulated; in a word, the development of all tissues proceeds more rapidly than it otherwise would, and the histological structure of the teeth is certainly made stronger.

It is true that Black, on the basis of exact chemical analysis, has sought to maintain that there is no difference between so-called good and bad teeth, as in the ash of both tissues the same masses of lime and other materials are found. In my opinion, however, the strength of the teeth does not depend upon the number of lime molecules found in the ashes of teeth, but upon their chemical and architectural constitution as it occurs in the living cell. With the same number of bricks we can build a house which is strong and secure, but we can also build one which will fall down of its own accord. From the ashes of teeth we are able to calculate the percentage of carbonate and phosphate of lime contained therein, but do not know even in what combination the lime occurs in the tissues. We do not know the chemical constitution or the architectural structure of the lime molecule, nor do we know how they are added to each other, or whether they are more closely attached at one time than at another. Upon these circumstances the strength of the teeth may be dependent, and not upon the percentage of lime in the ashes. Every practical dentist must agree that the teeth which are treated by us appear very varied. Some of them cannot be penetrated by our sharp instruments, whereas in others the instrument enters with ease.

After having described the various measures which nature herself utilizes in a prophylactic sense against the causation and spread of dental decay, we approach the measures which the community, the family, the individual man, and also the dentist, have to take in order to avoid the destruction of the human masticating apparatus. In this matter we must first take counsel with nature. We have seen from what has already been said that the best productive agent of nature against dental decay is hard work—that is to say, the masticating of hard and tough nutriment. The desire for comfort and enjoyment of the modern civilized man can scarcely be put a stop to—at all events, not to so great a degree that he will employ as much time and take as much trouble in mastication itself as, let us say, the people who stand on a low stage of development. It is almost unthinkable that civilized man will again take the great trouble to gnaw very laboriously very dry tough flesh like, for instance, the Laplanders do. No; he will have it chopped, cut, spiced, and so softly cooked by stewing or roasting that it almost melts on the tongue. The work which nature has ordained for the mouth

and the teeth, civilized man has, to a great extent, delegated to the manufacturers of food of every kind—to the sausage-shops and to cooks. A return to the simple, primitive manners is certainly impossible.

Many great thinkers have, of course, considered that a return into the lap of nature is the only safe course for mankind to take against decay and degeneration. The doctrine of Jean Jacques Rousseau in this connection is the most radical. According to him civilization is the misfortune of the human species. It produces all the misery which is hidden under the illuminating disc—the sun. Back, therefore, to the primeval condition; let the manner of life of the wild peoples, aye, even that of the animals, be our prototype.

Nevertheless, it is, perhaps, Utopian to believe that the human race could, or would, return to the primeval condition.

It is true that civilization possesses many shady sides, in regard to the spread of dental decay, particularly in the hygienic conditions of the great cities and in the regions of the great industries. But it has means at command with which to paralyze these noxious influences.

Through the spread of knowledge much can be accomplished. *As the health of man is his greatest fortune, upon which his existence altogether depends, we must lay much greater stress than we have hitherto done on the instruction in the school, in regard to hygiene.*

It is not enough, however, that such instruction is given. We must also see that the counsel which we tender is followed. In regard to the teeth of children, it is necessary to examine them annually, repair all defects and deficiencies, and to insist that daily careful cleansing is carried out. Henceforth it is the duty of the authorities in large cities and communities to appoint, for the youth of our schools, their own doctors and dentists, who in the interests of the common weal, will control the condition of the health of the children and give it the necessary care. The second duty of a community is the procuration of good drinking water. On the basis of extensive and exact calculations, Röse has demonstrated that hard drinking water, rich in lime, is an extremely important factor for the development of the teeth. The harder the drinking water is in any given locality, the less is the number of defective teeth. In a district where hard well water was employed for food and drink the existence of 18 per cent. less defective teeth could be demonstrated than in a neighboring district, where the drinking water consisted of soft river or sea water.

This statistical study of Röse, which comprises more than 100,000 children in various districts, appears to me to be an indication of nature that in many districts the development of youth is hampered owing to the lack of so-called earthly salts—lime and magnesium. Endeavors have been made to maintain that most foods contain as much lime as man requires for the building up of his bones, but later physiological investigations have shown that the heart, in order to carry out its function, needs lime salts every moment. The heart of a frog, if removed and placed in distilled water, ceases to act after a few minutes. If, however, we dissolve in the water inconsiderable masses of mineral constituents such as lime, magnesium, potassium and sodium, its function begins anew; it contracts and distends for many days. Lime and other mineral constituents of the blood must therefore be considered important articles of nutriment for the body, just as much as the carbon hydrates and albumen.

Robert Tigerstedt says: "By these observations it is, therefore, proved that the ash constituents of food are as important for the maintenance of the body as the combustible combinations contained therein; indeed, from the experiments carried out, it seems to follow that the grown-up body can more easily bear complete starvation than the ash hunger by itself."

We do not know yet in what form lime occurs in the metabolism; probably it is resorbed in organic combinations. Man receives from drinking water and from milk a great portion of his lime needs, as well as from foods of the vegetable kingdom, such as potatoes, turnips, carrots, cabbage, peas and other vegetables.

It happens, however, that the lime contents of these foods disappear or decrease to a great extent if they are boiled in soft river or sea water. The lime salts become dissolved in the water and are poured away with it. It is different when hard water is employed for cooking; the lime salts do not become soluble in it; on the contrary, the vegetable takes to itself more lime salts from the hard water, and consequently obtains a greater nutritive value.

Children frequently eat raw in preference to cooked vegetables—carrots for instance. This may perhaps be a hidden hint of nature to the effect that children, in the stage of development, require more of such materials as are present in the uncooked food than adults, as, for example, lime salts, which disappear during the cooking of the food.

Moreover, from Röse's investigations, we learn, for instance, that nearly the entire amount of lime in potatoes which are peeled

and cooked in soft water is dissolved in the water. When the potatoes are unpeeled the lime is maintained in them, especially if they are cooked so carefully that they do not burst. The best method to prepare vegetables, so that the lime contained in them shall benefit the teeth, is to steam them or boil them in as little water as possible, and also to employ this water, mixed with fat and other things, as a sauce.

Now if, based upon the preceding remarks, we wish to enumerate the prophylactic measures which we have to follow in order to prevent the spread of dental decay, they must be distributed between the community, the family, the single individual and the dentist in the following manner:—

I. It is the duty of the community:

1. To watch over the instruction given, in regard to hygiene (in our case the care of the teeth), to the people, and especially to the school children;

2. To pay attention to the maintenance of health itself (in our case the care of the mouth);

(a) In schools, especially national schools (school dentists);

(b) In the army and in the navy;

(c) In industrial concerns, such as bakeries, confectioneries and factories where materials are prepared or employed which are dangerous to the teeth, as, for example, acids, phosphorous and the like;

(d) In hospitals and other institutions where it is necessary for the doctor and dentist to act in unison;

3. To procure suitable drinking water.

II. It is the duty of the family:

1. To obtain hard water for food from springs or wells:

2. To prepare the foods in such a way that the earthly salts—salts of lime and magnesium—are not dissolved and removed;

3. To teach the children to eat hard bread, so that the work appointed by nature may be carried out in reference to the teeth.

III. It is the duty of the individual:

1. To brush the teeth regularly every day;

2. To have them annually examined by a dentist;

3. To masticate the food carefully, every mouthful at least

from 80 to 100 times.

IV. It is the duty of the dentist:

1. To act by example by paying attention to his own teeth and to those of his family and servants;

2. During the treatment of his patients to look more to the future of the teeth than to the momentary need;

3. To act in unison with the family doctor, especially in regard to diseases of the nose and the pharynx, which may cause disturbances of articulation in the maxillae and in the face;

4. Finally, it falls to the charge of the dentist to endeavor to obtain a high degree of education, so that his scientific vision is enlarged, his fame is raised, confidence is placed in him, and his patients will follow his counsel and prescriptions, especially in regard to general measures which the community must take in hand in the struggle against dental decay, as such decay, like an epidemic, is spreading more and more, both among young and old, and threatens to destroy the health and the well-being of our populations.

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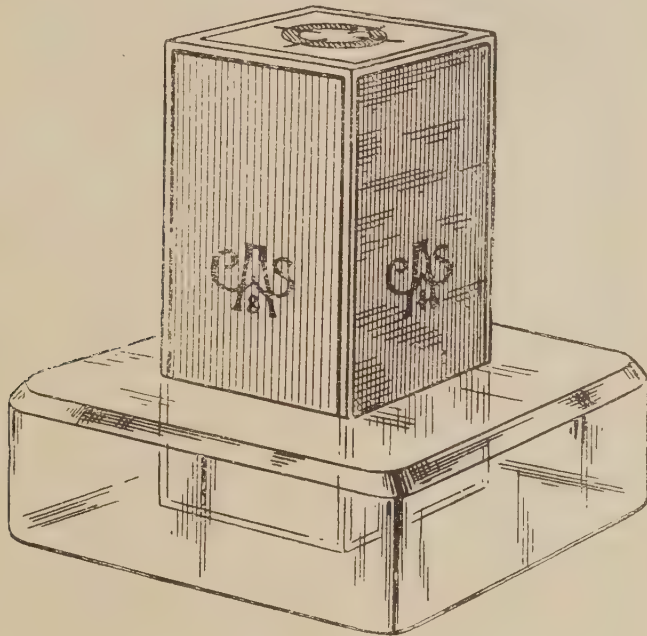
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Sole owners of the original formula—

CLAUDIUS ASH, SONS & CO., Limited

Note the Canadian price:

50 Cents per Box
10 Lbs. for \$9.00

Ask for a Sample Cake.

Reproduction of Restorations made by DR. A. McALPIN
Bradford, Pa. with "SCHOENBECK CEMENT."



Extracts from Paper and Discussion on Silicate Cements.**Liverpool Odontological Society, Nov. 15, 1909.**

Dr. Lewis Osborne stated: I have used silicate cements for four years and tried three makes, Harvidid, Ascher's and Schoenbeck's. In my hands the latter has proved by far the best in all respects.

Dr. Matthews stated: Had used all the three cements Mr Osborne mentioned and he agreed that he had the best results from Schoenbeck's.

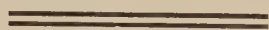
Dr. Edwards stated: Had had excellent results from Schoenbeck's; had also found it very good in repairing bridges, or where a porcelain front had broken off.

Dr. Harrison stated: He had used most of the silicate cements now on the market, but he had discarded them in agreement with other speakers for Schoenbeck's.

Dr. Steweni: Had had considerable experience with Schoenbeck's, and from laboratory tests and from clinical experience it seems to be by far the best on the market. Had met Dr. Schoenbeck in Berlin, who laid great stress on the proper way to mix the cement, as more care was required than with ordinary silicate cements or ordinary phosphate cements.

See Dental Record, January number, 1910.

What You Have So Often Asked For.



**A POPULAR TEMPORARY STOPPING
30 Cents a Box.**

It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50.**

SEND US AN ORDER NOW

Ash's Popular Stopping

Schoenbeck Silicate Cement

The Nearest Approach to Nature's Enamel Known to Dental Science

The illustrations on the next pages showing work done by DR. MCALPIN, together with Society reports, criticisms, test reports, instruction and other general information regarding "SCHOENBECK'S CEMENT" are of surpassing interest to the Dental Profession.

This Cement has gained and maintains the foremost position of all Cement fillings.

SUPPLIED IN THE FOLLOWING SHADES

No. 1	Whitish	No. 8	Greenish Grey
2	White Yellow	9	Bluish White
3	Light Yellow	10	Brownish
4	Yellow	11	Pink Light
5	Dark Yellow	12	Pink Medium
6	Light Pearl Grey	13	Yellowish Grey
7	Pearl Grey	14	Brownish Grey
15		Slate Bluish	

PRICES

1 Color, Small	\$1.50	1 Color, Large	\$3.00
4 Color Packet	5.50	6 Color, Packet	8.00
1 Small Powder	1.00	1 Small Liquid	.50
1 Large Powder	2.00	1 Large Liquid	1.00

Pure Cocoa Butter.....Per Tube .20

Schoenbeck's Special Varnish.....Per Bottle .35

A Popular Priced Wax

IS IN GREAT DEMAND

The large sale for our ENGLISH WAXES bears testimony to their great value.

No. 3, Pink	per lb.	.65
“ 2, “	“	.80
“ 1, “	“	.90
Brown for Base	“	.85
Extra Tough Pink	“	1.00
“ “ “	“	1.25
“ “ Yellow.....	“	1.00
Black for Inlays in fine sticks, per box		.35

Send us that MAIL ORDER, or ask one of our many travellers to supply you.

ASH'S MINERAL FACINGS

FOR DENTAL REPAIRS

Made in the principal patterns and sizes of our Flat Pin Teeth.

The three sizes of our Mineral Facings, here illustrated, are sufficient to show the distinctive feature to which we wish to draw attention, viz., the oval cavity in the back of each.

They can be used for repairing nearly every kind of denture; they are easily applied, exceedingly durable, and can be quickly fitted—it does not take longer than from ten to fifteen minutes to fit one.

They are invaluable for repairs to Bridges, and in all cases of Plate and Crown Work in which a flat tooth has to be replaced.

The oval cavity at the back of each facing corresponds with the positions of the pins in our Flat Pin Teeth. The facings do not require backing, but can be applied to the backings of fractured or broken teeth

when the broken portions of mineral have been removed from the backings.



83



71



14

DIRECTIONS FOR USE.

Chip away the remains of the broken tooth from around the pins in the backing, and roughen the backing with a suitable instrument or tool.

Make a thin mix of Ash's Inlay and Crown Cement, or other suitable Oxyphosphate cement, paint both the tooth backing and the new facing with a thin layer of it, press the facing firmly on the backing and keep it under pressure until the cement has thoroughly set.

Important Note.

On no account must any of the Silicate Translucent Cements be used for attaching our Mineral Facings to teeth backings, etc., because they are not sufficiently adhesive for the purpose.

Ash's Mineral Facings.....each \$.18

Ash's Mineral Facings.....per 100 15.50

Ash's First Quality Engine Burs

We carry in Toronto a large stock of these burs which are made of the best steel available. They are all British made on the most approved Bur machines known. They are attractively done up with a mica window to each package.

Note the prices. They have never been equalled by

HIGH QUALITY BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. These burs are of the highest quality, scientifically made and are as low priced as is consistent with ASH quality.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.91	\$.83
Rounds.	8 to 11	1.25	1.17	1.08
Wheels.	11 1/2 to 18	1.00	.91	.83
Wheels.	19 to 22	1.25	1.17	1.08
Inverted Cones.	33 1/2 to 40	1.00	.91	.83
Inverted Cones.	41 to 44	1.25	1.17	1.08
All Fissures.		1.00	.91	.83

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

ASH CROSS-CUT BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. The most rapid-cutting Burs obtainable.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.91	\$.83
Rounds.	8 to 11	1.25	1.17	1.08
Wheels.	11 1/2 to 18	1.00	.91	.83
Wheels.	19 to 22	1.25	1.17	1.08
Inverted Cones.	33 1/2 to 40	1.00	.91	.83
Inverted Cones.	41 to 44	1.25	1.17	1.08
All Fissures.		1.00	.91	.83

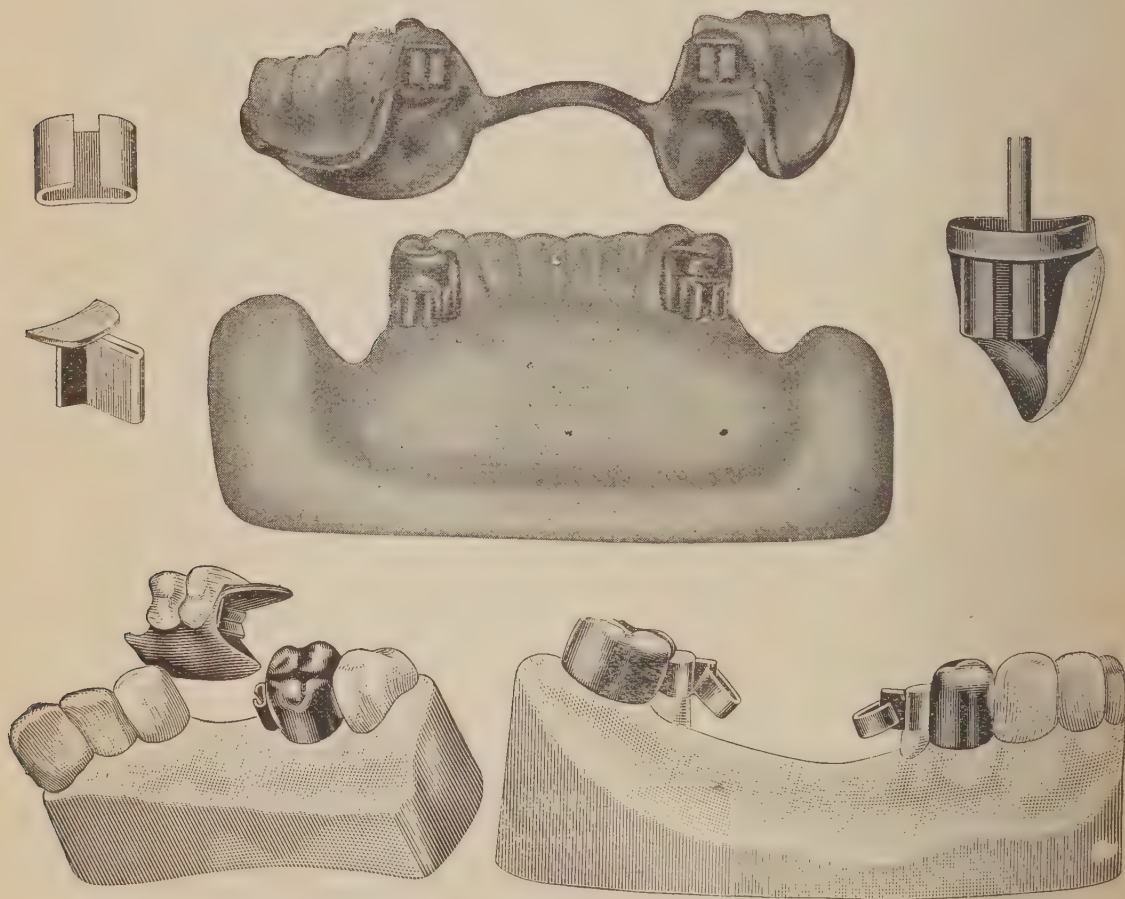
In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

CHARLES L. DALY

The X. L. C. R. Dental Laboratory

The illustration shown below gives a clear idea of

THE MORGAN ATTACHMENT.



From this illustration one can readily see the great value of this attachment in many difficult cases.

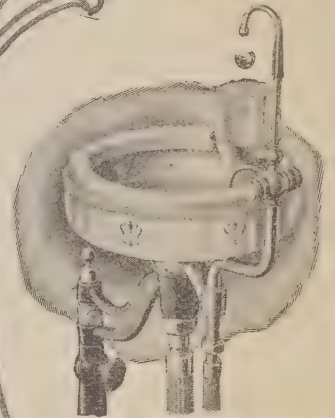
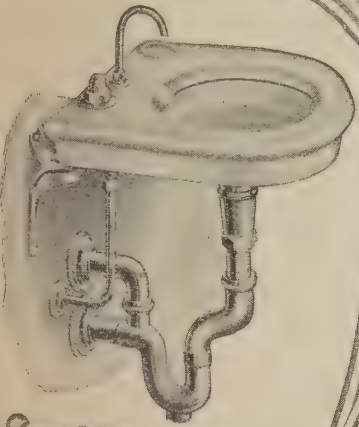
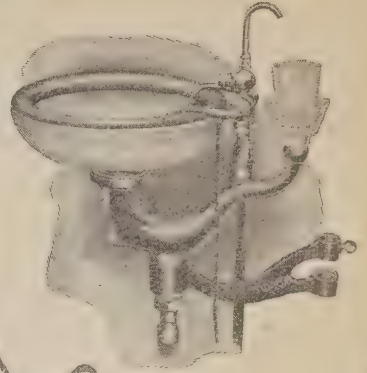
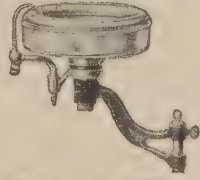
We are prepared to execute this work to the entire satisfaction of the Dental Profession. Let us have your next order for any kind of mechanical work—We will do the work right and have it back in your hands when you want it.

X.L.C.R. DENTAL LABORATORY

2 College Street, Toronto



A.C. CLARK & CO.
CHICAGO
SPITTOONS
FOR ALL
PURPOSES



OUR PYORRHEA CLINICS

prove that "Dentinol" and "Pyorrhocide" used in conjunction with scaling produce results in the treatment of Pyorrhea, Gingivitis, spongy and bleeding gums that are UNEQUALLED.

WE TREAT CASES PRESENTED BY DENTISTS ONLY and COMPLETE CASES without expense to Dentist or Patient. Our Clinics are open to ALL DENTISTS during ALL TREATMENTS. That old notion about "patients not wanting to pay for treatment," is knocked sky high when you show them RESULTS. Rich and poor alike are wonderfully appreciative.

OUR CLINICIANS USE

The Improved Dentinol Pyorrhea Scalers

(Set of 12) \$9.00.

By the use of which the removal of all deposits is simplified
Full directions for using each instrument enclosed.

The Dentinol Perfect Syringe

Ground glass barrel and plunger (no packings) flat tipped platinum iridium point.

Dentinol

2 oz. bottle (Flooded into pocket with syringe). \$1.00

Pyorrhocide

4 oz. can (used by patient as a Dentifrice) \$9.00 per doz.

Pyorrhocide is a powerful antiseptic, medicated, prophylactic Dentifrice and is the best for GENERAL USE in that the use of it maintains hygienic conditions in the oral cavity, thoroughly cleans the teeth, and PREVENTS PYORRHEA.

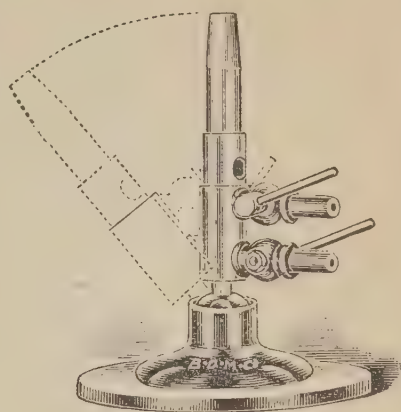
Sold through all Dental Supply Houses.

Literature mailed free on application to,

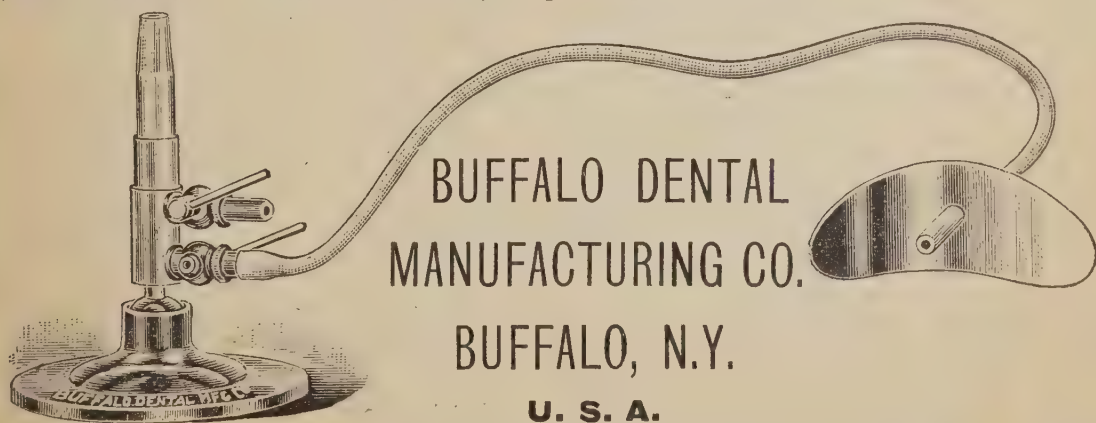
The Dentinol and Pyorrhocide Co.
1 Union Square, New York City

WILL SOLDER ANYTHING.

The No. 5 1/2 COMBINED BUNSEN and BLOWPIPE, will solder anything down to the finest orthodontia appliance, and that is just why you, the general practitioner, or the crown and bridge specialist need it. The flame is either a mighty nice bunsen or a powerful blowpipe flame, from a pin point to a large brush as may be required. The burner tube is adjustable at any angle to horizontal, and is low down, so the hand supporting the work may rest on the bench. For very fine soldering it requires but a puff of air, either from the mouth or the smallest foot blower.



The entire burner is beautifully polished and nickeled. The price \$3.15. With mouth piece as illustrated \$4.05. For natural gas .65 cents additional. Postage .13 cents. Your Dealer. CIRCULAR?



BUFFALO DENTAL
MANUFACTURING CO.

BUFFALO, N.Y.

U. S. A.

B O R I T H

An excellent preparation to recommend your patients for cleansing Dentures. It is a thoroughly reliable preparation.

Price \$2.00 dz.

Z I M O

The best obtundent on the market for the painless extraction of teeth and minor surgery; Antiseptic and Germicidal. Can be used in all cases; safe and effectual. No bad after effects. Once used, always used. "ZIMO is a great practice builder," as everyone says that has used it. 4 oz. bottle, \$1.00; 6 bottles, \$5.00. Every bottle guaranteed. Try a bottle; if not all right send it back and get your money.

Manufactured and put up by

Dr. S. T. WHITNEY,

St. Stephen, N.B. Can.

General Agents:

CLAUDIUS ASH, SONS & CO. Ltd.,

12-13, Grenville Street, Toronto, Ont.

For Economy, Strength and Practicability

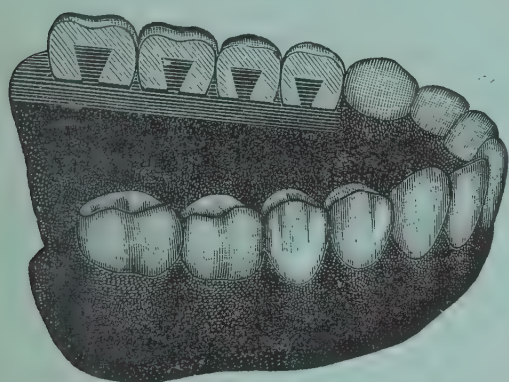
USE

CONSOLIDATED DIATORIC TEETH

In Combination Sets

A Combination Set { 6 Platinum Pin
8 Diatoric Teeth } costs \$1.46

That's the proof of their economy



Sectional view of pinless bicuspid and molars with palatal surfaces ground off, showing how securely the wedge-like shaft of vulcanite attaches them to the plate.

The illustration shows how firmly the pinless bicuspid and molars are imbedded in the plate. The well known mechanical advantages of the Consolidated Diatoric, its simplicity and the ease with which the vulcanite imbeds itself, its cleanliness and aseptic advantages and its *strength* are augmented by

THAT LIVE TOOTH APPEARANCE

of the Famous Consolidated Porcelain of which it is made.

Consolidated Combination Teeth are made in a large variety of molds—illustrations and further description will be found on pages 50—55 of Consolidated Dental Mfg. Co.'s Tooth Catalog.

Consolidated Combination Sets are
sold by all leading dental dealers

CONSOLIDATED DENTAL MFG. CO.

NEW YORK
BOSTON

CHICAGO
DETROIT

PHILADELPHIA
CLEVELAND

Ash's Dowel Crowns

If you have not figured out this
Crown proposition, **Do it now!**

The price is right, but it is not only the price that appeals to so many dentists, as the mould and texture of these teeth.

A leading dentist wrote us in February as follows:—

"I see by your advertisement that you have Dowel Crowns in shapes that I have been looking for for some time with negative results, and I am glad to see that you are placing them on the market."

This is only just one of a great many voluntary letters written to us regarding these crowns.

The moulds are exceptional and are adapted to all cases in the human mouth. The texture and strength are unsurpassed by any crown on the market to-day.

The sale that these crowns have enjoyed since they were freely placed on the market has been greater than had been anticipated, and we are selling many thousands of them each week. The scale of prices given below will more than interest you. We would draw your attention to the shape of the pins for these crowns, which have been most favourably received.

Single Crowns	12c. each
100 Crowns.....	\$10 00
500 Crowns.....	47 00
1000 Crowns.....	90 00
Dental Alloy Pins, Single.....	25c. each
Dental Alloy Pins, Bifurcated.....	35c. each
Base Metal Roughened Pin, New Style....	5c. each

Above prices subject to 5% cash if purchase amounts to \$25.00 or over. Compare these prices with rates charged for other crowns. You will be surprised at the saving to be had by using Ash's Crowns.

CLAUDIUS ASH, SONS & CO., Limited

11-13 Grenville Street, TORONTO ONT,

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

JUNE, 1911

No. 9

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of Teeth.

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CLAUDIUS ASH, SONS & CO., Limited

5-12 Broad Street, Golden Square

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STOCKHOLM, Malmskilnadsgatan, 44

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CAIRO, 4 Taher Street, Opera Square

BRESLAU, Gartenstrasse, 22

WHEN WE PLACED ON THE MARKET

Ash's Popular Alloy

We knew there would be a large demand for it. The sales so far have been far and away beyond our expectations.

Ask our travellers how their customers who are using it appreciate it.

**It is the Best Low Priced
Alloy on the Market**

SEND US A MAIL ORDER NOW

Ash's Popular Amalgam

**\$1.00 Per Ounce
5 Ounces for \$4.50**

Ash's Canadian Monthly Circular

VOL I.

TORONTO, JUNE 1, 1911

No. 9

SOME HINTS AND IMPORTANT POINTS ON THE BACKING OF TEETH

By G. W. R.

Often too little attention is paid to this branch of mechanical work, and yet upon the method employed the ultimate success or failure of the whole denture depends.

In order to save trouble, we must first take trouble. There are many methods adopted for attaching a metal backing to a tooth, and much delay and inconvenience are often caused by lack of observation and attention to detail. It must be understood that fitting a piece of metal to the back of a tooth is not necessarily backing the tooth, and that in order to get any real support the backing must be in absolute contact with the mineral of the tooth at every part, such as is obtained when gold is cast upon a tooth. If a tooth be broken off a cast gold plate, it will be noticed that every little pit or depression in the mineral is outlined upon the gold backing. This perfect contact lends great support to the mineral of the tooth, and greatly lessens the strain upon the platinum pins.

The practice of using the single pin perforator is fruitful of much failure, since in punching the holes one at a time, it is difficult to get them quite parallel and the right distance apart. The plan usually adopted is to touch the ends of the pins with a little rouge, which marks the gold when the pins are pressed upon it, and thus indicates where the holes are to be punched. In doing this, however, the dots of color are often slightly spread. This makes them larger than the pin-holes are required, and consequently adds to the difficulty of obtaining the proper distance between the holes, with the result that when they are punched, the pins will not fit snugly, and, as the holes have to be broached out

to remedy the defect, room is unfortunately produced which allows the solder to flow easily behind the backing. In such cases it is obvious that the backing cannot be in close contact with the tooth.

We understand that some workers habitually paint the backings with a layer of borax before fitting them to the teeth. This practice, in our judgment, so far from gaining approval, should be most carefully avoided.

The best tool for use in punching holes for backings is the perforator invented by Mr. J. C. Young, of Warrington, with which two holes can be punched at once, not only rapidly, but with mathematical precision, and with exact correspondence between the holes in the metal plate used for backing the teeth and the pins of the teeth to be backed. It also provides the quick and easy disengagement of the plate from the perforating pins after punching. Further, the difficulty of separating, without twisting or injuring the perforated plate—the greatest obstacle to punching two holes at once—is entirely removed. By its use the risk of fracture in backing teeth is reduced to a minimum; no measuring is required; the tooth is its own gauge, and the holes are absolutely in perfect alignment with the pins.

After an experience of many years with this perforator, we feel that it is impossible to over-estimate its value; we consider that it is indispensable for the successful backing of teeth.

Before finally fitting the tooth to the backing, great care must be taken to remove all traces of wax, for if any particle of wax be left on or around the pins, it will carbonize, and experiments undertaken by Professor Hartley, of Dublin, showed that minute particles of carbon caused platinum pins to become crystalline and brittle.

As we have already stated, the metal backing must be in absolute contact with the back of the tooth. The only way of successfully accomplishing this to perfection is by swaging.

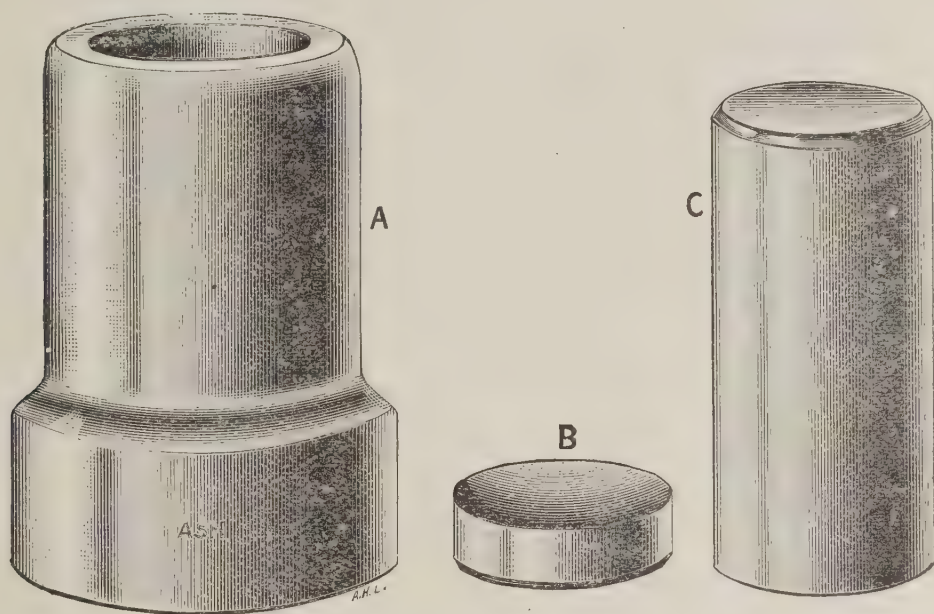
To Swage a Backing.—Take a piece of leaf gold, No. 40 or No. 60, cut it to size, press it over the back of the tooth with the fingers, then place it in position between the hard blocks in Ash's Crown Swager (Fig. 1), and swage home in a large size flask press, or by striking with a hammer. After this, fit a thicker backing over the foil, about Ash's size No. 6 of 16-carat gold plate which has previously had the holes punched in it with Young's Perforator. Before this thick backing is put on the tooth the holes should be countersunk on the surface which goes against the tooth. When the backing is fitted, the pins

should be bent over at right angles, and the swaging completed. It is important to avoid the use of backings which are too thin, because the flexibility of thin metal may cause fracture of the teeth.

Backings of gold foil are frequently swaged upon teeth and thickened up with gold solder. This practice is to be condemned, as the contraction of the solder is likely to cause trouble, and adds greatly to the risk of fracture.

The process of soldering which naturally follows is easily and successfully accomplished when the backings have been perfectly fitted.

Figure 1.



ASH'S CROWN SWAGER.

A—Body of Swager; B—Bed-Plate; C—Plunger.

For swaging crowns of fine or 22-carat gold of any thickness up to Ash's size No. 5, and for swaging teeth backings.

The conditions necessary for successful soldering are:

- (1) A clean, bright surface along which the solder is to flow;
- (2) Contact of all parts to be united;
- (3) A suitable solder for the case in hand;
- (4) Avoidance of excess of solder;
- (5) A flux free from impurities; and
- (6) A heat which is gradually and uniformly distributed.

Given that the backed teeth fit accurately, as they should to the plate and gum, they are placed in position, secured to the plate with sticky wax (Model Cement), and the case is now ready to be inserted in the investing material.

The gradual and uniform distribution of heat is of the utmost importance in all soldering operations. When the required temperature is reached, the blow-pipe flame should be directed upon the parts to be united, and finally upon the solder. As little solder as possible should be used, and as it is exposed to the fluids of the mouth, it should be of high quality, to prevent discoloration at the soldered parts, and to correspond as nearly as may be with the color of the denture.

In conclusion, we venture to state that if these hints are carried out, fracture of teeth or pins is almost impossible.

Our Model Operating Room

Will give you some fine ideas in office equipment and decoration. If you are in Toronto it will pay you to call and inspect the best Model Room in Canada.

Second-Hand Goods

1 Ritter All Cord Engine Wall Type, 110 Volts, Direct, Nearly New, A 1 Condition	\$75 00
1 Ritter Cable Engine, 110 Volts, Direct Current, Fair Condition.....	40 00
1 Ritter Overhead Cable Type Engine. 110 Volts, Direct Current, Excellent Condition	65 00
1 Davis Gasometer, less Face Piece and Tubing, Excellent Condition.....	18 00
1 Pelton No. 1 Furnace with Pyrometer, A 1 Condition	65 00
1 Electro Dental Folding Bracket Engine. 110 Volts, 60 Cycle Current, in Perfect Condition	80 50
No. 57. Cabinet, Quartered Oak (American Cabinet Co.) In first class condition.....	65 00
(This Cabinet is now in the West and is a good proposition for a Western man).	

We have for sale a Second-hand Equipment including furniture for Reception Room. This Outfit will be quoted to an early purchaser for \$80.00.

WE INVITE SPECIAL DEPOSIT ACCOUNTS.

A cash deposit of \$100.00 to apply to general merchandise, entitles the sender to a discount of \$11.11.

A cash deposit of \$50.00 entitles the sender to a discount of \$2.50.

A cash deposit of \$25.00 entitles the sender to a discount of \$1.25.

Why not send us a deposit NOW.

We have a number of excellent Practices for sale.—Also situations for graduate assistants and laboratory men.

WE ARE NOW READY

With our new cement product

Ash's Empire Cement

This cement will be found to combine all the qualities that are demanded by the most discerning dentist. We don't intend to say much about it.

It will do its own Advertising.

Send your Mail Order now

Single Color Box - \$1.00
4 Color Box - - - 2.50

**MADE BY THE OLDEST DENTAL HOUSE IN THE
WORLD.**

FOR SALE—First Class Practice in a thriving town in Saskatchewan. Apply to Claudius Ash, Sons & Co, Ltd., 11-13 Grenville Street, Toronto, Ont.

FOR SALE—Practice in thriving town of Berlin, Ont. Good Office and Equipment. Apply to Claudius Ash, Sons, & Co. Ltd, 11-13 Grenville Street, Toronto, Ont.

ASH'S NEW EMPIRE CHAIR.

THE following Illustrations of our new and Improved Chair will give the intending purchaser a very complete idea of its appearance and general features. Many of the chief improvements and modern up-to-date details need to be actually seen to be appreciated. The price of this chair is much lower than any other good chair ever sold in Canada. We are able to do this because of our many years of experience at chair making; our complete factory at Walton-on-Thames, and finally by the help of the British preferential tariff. These chairs are guaranteed absolutely, and we can assure you that their value has never been equalled.

Claudius Ash, Sons & Co. Limited,
11-13 GRENVILLE STREET,
TORONTO, ONT.

Ash's New Empire Chair with Wilkerson Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches.



This Illustration shows rear view with lever arrangements. The right arm is dropped, but can be placed at any angle to the chair.

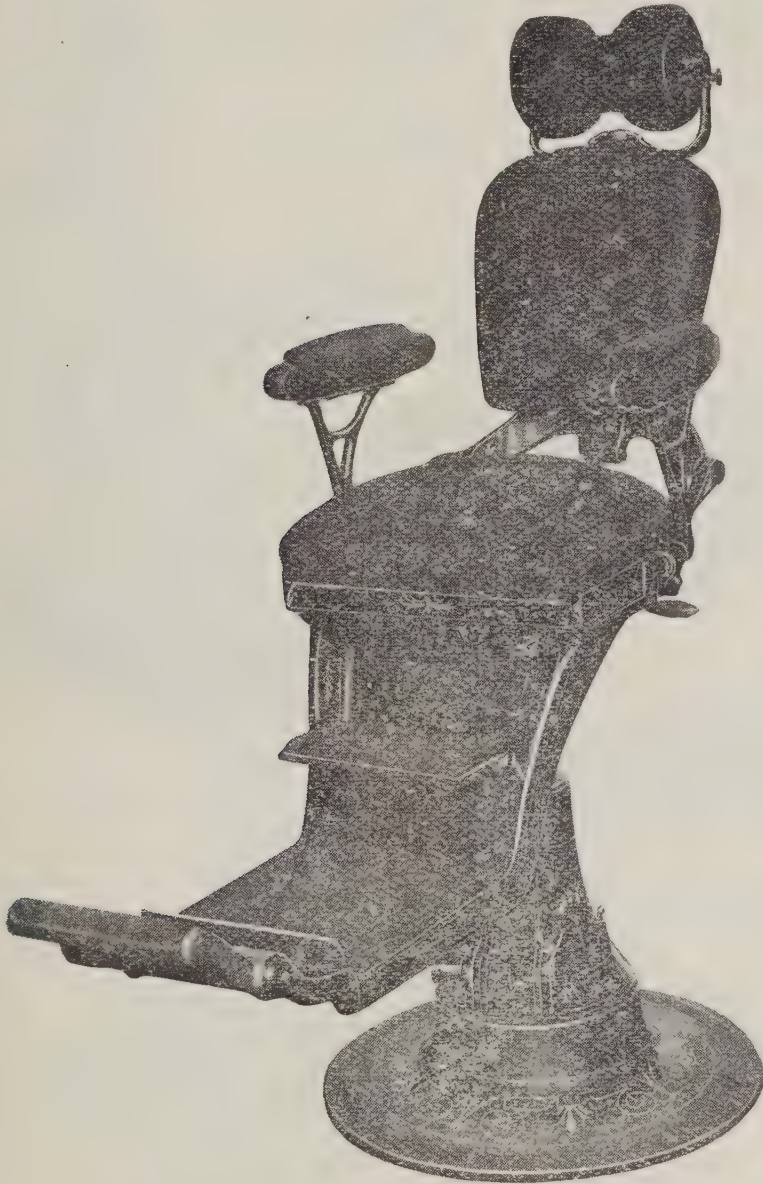
In finest Morocco Leather, Linoleum Foot Board.....\$165.00
In finest Plush, Carpet Foot Board 160.00

White Enamel adds \$12.00 to above prices.
10% Discount allowed for prompt cash.

This chair is equipped with Clutch-Tilt and Back, giving no jar or jolt to the patient.

Ash's New Empire Chair with Roll Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches.



This Illustration shows the front of the chair with the most ideal of Head Rests in position. One of our customers who has had plenty of experience with other chairs, writes us as follows:—

“I was a little afraid of the Roll Head Rest, but wouldn't have anything else on a bet. It's the best chair I ever saw for the money, or for \$75.00 more.

In finest Morocco Leather with Linoleum Foot Board..\$160.00

In finest Plush with Carpet Foot Board..... 155.00

White Enamel adds \$12.00 to above prices.

10% Discount allowed for prompt cash.

This chair is equipped with Collapsible Arms, Clutch-Tilt and Back.

Ash's New Empire Chair with Wilkerson Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches



In finest Morocco Leather, Linoleum Foot Board \$165.00

In finest Plush, Carpet Foot Board 160.00

White Enamel adds \$12.00 to above prices.

10% Discount allowed for prompt cash.

This chair is equipped with Collapsible Arms, Clutch-Tilt
and Clutch-Back.

Ash's New Empire Chair with Roll Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches.



This Illustration shows chair in child's position. The Roll Head Rest solves the difficulty that presents itself to the dentist in working with the restless *little* patient. The head is held firmly in the Roll Rest and through the perfect support given, the child does not become so easily tired and restless as with the Sectional Rest.

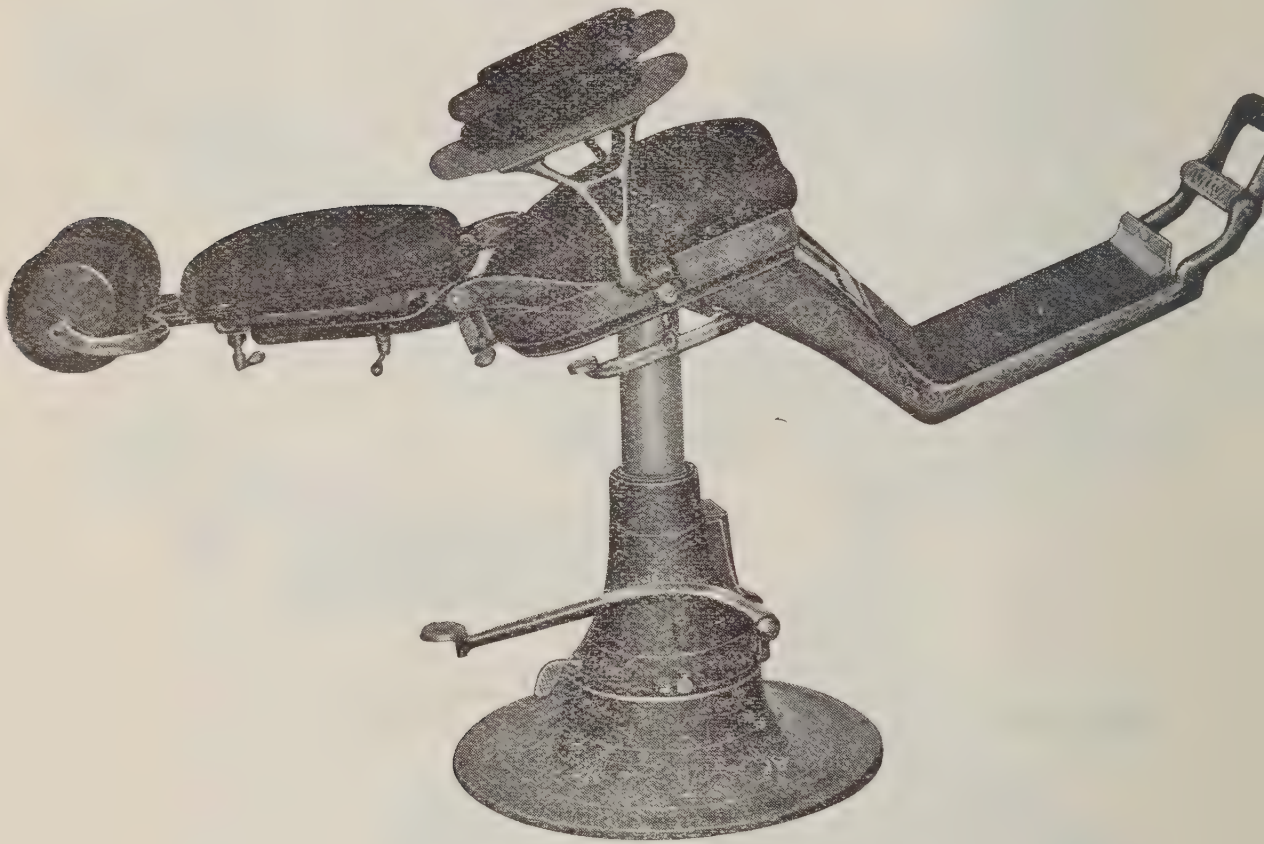
In finest Morocco Leather, Linoleum Foot Board.....\$160 00
In finest Plush, Carpet Foot Board..... 155.00

White Enamel adds \$12.00 to above prices.

Less 10% for prompt cash.

Ash's New Empire Chair with Roll Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches.



This Illustration shows the chair from a side view in an anaesthetic position. This position is attained with no jerking and jarring to the patient, owing to the Clutch-Tilt and Back. This chair is beyond any doubt the easiest pumped chair extant

In finest Morocco, Linoleum Foot Board\$160.00

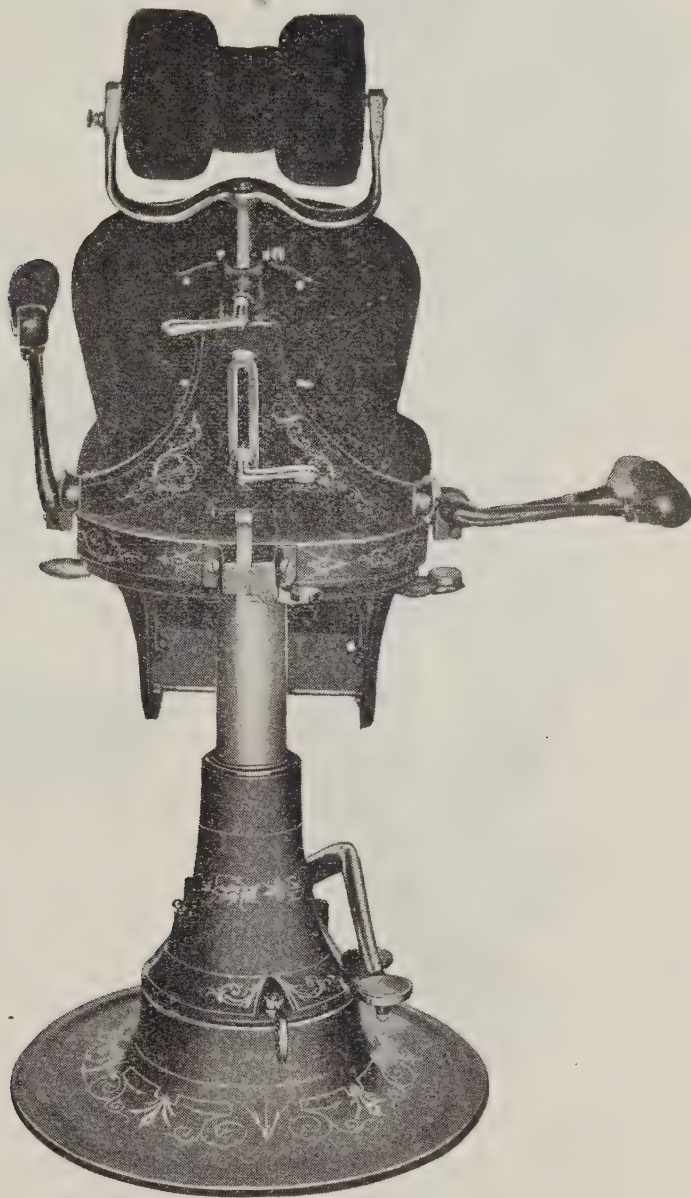
In finest Plush, Carpet Foot Board..... 155.00

White Enamel adds \$12.00 to above prices.

Less 10% for prompt cash.

Ash's New Empire Chair with Roll Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches.



This Illustration shows the operation of the adjustable arms. The chair is also equipped with the Clutch-Back and Tilt. The famous Roll Head Rest shown, never works loose or gets out of order. It is most easily adjusted and its crowning victory over all other Head Rests is that it supports the patient at the base of the skull, and not at *two small spots*, as in the case of all Sectional Head Rests.

Ash's New Empire Chair with Roll Head Rest

Highest position of seat 31 inches. Lowest position of seat 16 inches.



This Illustration shows how the dropping of the Arm makes a convenient seat for the operator. This Arm Seat will take with safety a 225 pound man. Another of our satisfied customers writes us as follows :—

“I wouldn't trade my chair for half-a-dozen of any other kind—it's sure *the* chair.”

In finest Morocco, with Linoleum Foot Board\$160.00

In finest Plush with Linoleum Foot Board 155.00

White Enamel adds \$12.00 to above prices.

Less 10% for prompt cash.

“In our next issue we will tell you of our new Double Cylinder Chair.”

Stent's Composition

Attempts have been made to imitate Stent's Compound; even the color of the Container, and the label have been copied, for the purpose of deceiving the unwary. Every cake of the **Original Genuine** Stent's Composition bears the Trade Mark, which consists of the single word

STENT'S

Without Initials of any kind and the outlines of two **Impression Trays**, also the label on every box bears this signature:

C. P. & A. Stent.

Sole owners of the original formula—

CLAUDIUS ASH, SONS & CO., Limited

Note the Canadian price:

50 Cents per Box
10 Lbs. for \$9.00

Ask for a Sample Cake. Free for the Asking.

IN putting into force on March 1st a new and reduced schedule of prices for DENTAL RUBBERS, we are following as closely as possible the retail price governing in London, adding the Canadian duty and a slight fraction for transportation. By a close examination of the new schedule, you will see a distinct reduction in most of our Base Rubbers, and if you will further compare them with the prices of other makes of rubbers, you will find a great saving will be effected by using **Ash's Vulcanizing Rubbers.** We have led the world for many years in the manufacture of Dental Rubbers, and to-day the product is distinctly in advance and superior to any other rubbers at present upon the market.

ASH'S GUM PINK LIGHT RUBBER

has never been successfully imitated, and no other pink gives so close a reproduction of the natural gum.

Do not be content to take some other brand that a salesman tells you is just as good as Ash's.

For prices and quantity rates see next page.

Ash's Dental Rubbers

From March 1st the following prices will apply on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.40	\$5.00	\$4.75
No. 1X Pink, Medium.....				
No. 1 Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....	5.00	4.50	4.25	4.00
No. 2X Pink, Medium.....				
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

Improved Black.....	4.25	3.80
Combination		
White for Side Blocks, etc.....		
Child's "G"		
A. E. Elastic, Dark Brown	3.75	3.35
W. Elastic, Dark Brown.....		
Whalebone No. 1, Dark Brown.....		
Whalebone No. 2, Light Brown.....		
Solid Base	3.50	3.15
Dark Red.....		
Flexible Base.....		
Dark Elastic.....		
Maroon.....	2.75	2.45
Red.....		
Orange.....		
Dark Brown.....		
Brown		
English Base.....		

SPECIAL—FOR TENDER GUMS, ETC.

	Degrees Fahrenheit	Time H.	M.	lb.
Soft Pink, for lining Palates.....	310	1	15	\$6.00
Soft Dark Red.....	310	1	15	4.25
Vela for Artificial Palates	270	6	0	6.00
Brown Weighted.....				4.75
Pink Weighted.....				6.00
Brown Repairing.....				4.75
Pink Repairing.....				6.00

NOTE.—Cash Discounts do not apply on quantity rates on our Coating Rubbers in any quantity over 5 lbs.

Ash's Dental Rubbers

UNAPPROACHED FOR

**Excellency, Purity, Strength, Elasticity
and Density.**

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



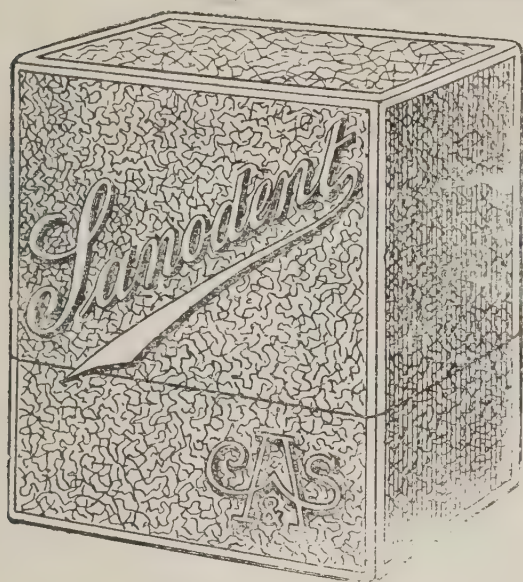
in addition to the name of the Rubber.

Always ask for ASH'S when ordering Dental Rubbers.

For full list of our Dental Rubbers showing NEW and REDUCED prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we give full **16 OUNCES** of Rubber TO THE POUND, exclusive of the linen backing. We have also stated that MOST American manufacturers DO NOT give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?



Sanodent

(Registered)

A Superior Root Dressing

FROM THE FORMULA OF
MR. C. R. FITCH, L.D.S., Eng.

Sanodent has been regularly used and well tested for nearly four years with the most satisfactory results, hence it is offered to the Profession as a thoroughly reliable preparation

DIRECTIONS FOR USE.

AS A DRESSING FOR SEPTIC OR ABSCESSSED TEETH.—Thoroughly clean out the contents of the Pulp Chamber and Root Canals in the usual manner. Mix the Sanodent Powder and Liquid to the consistency of thick cream and apply on Cotton Wool to the Root Canals and Pulp Chamber. Repeat these dressings until the tooth is perfectly "sweet." Then permanently fill the Canals with either Asbestos Fibre, Gutta Percha Points, or Cotton-Wool covered with Sanodent mixed to a fairly thick paste.

In very septic teeth, which at the time of treatment are not abscessed, it is advisable at the first to clear out the contents of the Pulp Chamber only, apply a dressing of Sanodent, and leave the treatment of the Canals until a subsequent visit, when their contents will be far less septic.

SOME OTHER USES.—In those cases in which for some reason or other (*e.g.*, Tortuous Canals), it is impossible to clear out the Canals thoroughly, cover the orifices of these Canals with Sanodent mixed to a paste, and carried to place on Asbestos Fibre or Cotton Wool. Any remaining Pulp will be preserved in an antiseptic condition.

As a "Mummifying" agent, those who practice "Mummification of the Pulp" will find Sanodent excellent. Subsequent to devitalising and removing the coronal portion of the Pulp, apply Sanodent, mixed to a paste, on either Asbestos Fibre or Cotton Wool.

After the application of Arsenic, a dressing of Sanodent left on for a day, prior to attempting the removal of the Pulp, will render the Pulp tough and thus admit of its being much more easily removed whole from the Canals.

Sanodent is very useful as a permanent Root-Canal Filling when it is mixed to a paste and used in conjunction with Asbestos Fibre, Gutta-Percha Points, or Cotton-Wool.

N.B.—Do not force Sanodent through Apical Foramina, and do not seal it in contact with living tissue, either pulp or gum. Sanodent is not intended to replace proper Root Treatment, but to aid it.

Sanodent is supplied in stoppered bottles. The bottles should be kept well closed when they are not in use. After exposure to light and air the liquid becomes somewhat darker in color than as supplied, but this is no detriment to it, and in no way affects its efficacy.

Sanodent Powder and Liquid in Packets, per packet.....\$1 25

NOTE.—We have a limited number of free samples of Sanodent left. Applications for these will be filled in strict order so long as the supply holds out.

A Popular Priced Wax

IS IN GREAT DEMAND

The large sale for our ENGLISH WAXES bears testimony to their great value.

No. 3, Pink	per lb.	.65
“ 2, “	“	.80
“ 1, “	“	.90
Brown for Base	“	.85
Extra Tough Pink	“	1.00
“ “ “	“	1.25
“ “ Yellow.....	“	1.00
Black for Inlays in fine sticks, per box		.35

Send us that MAIL ORDER, or ask one of our many travellers to supply you.

Here's a good thing in Alloy

Ash's Popular Amalgam

Consequent to a steady demand for a lower priced Alloy than C. A. S. Almagam, we have spent a great deal of time on the production of an Alloy that would be high in its proportion of silver, have great edge strength and hold its color in the mouth. We can confidently state now that we have what you have been looking for in

ASH'S POPULAR AMALGAM

\$1.00 Per Ounce

5 Ounces for \$4.50

Ask our travellers about it or better still, sit right down and send us a MAIL ORDER now. The price is certainly attractive and the guarantee of the oldest house in the world protects you.

SEND US YOUR ORDER

What You Have So Often Asked For.

**A POPULAR TEMPORARY STOPPING
30 Cents a Box.**

It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50.**

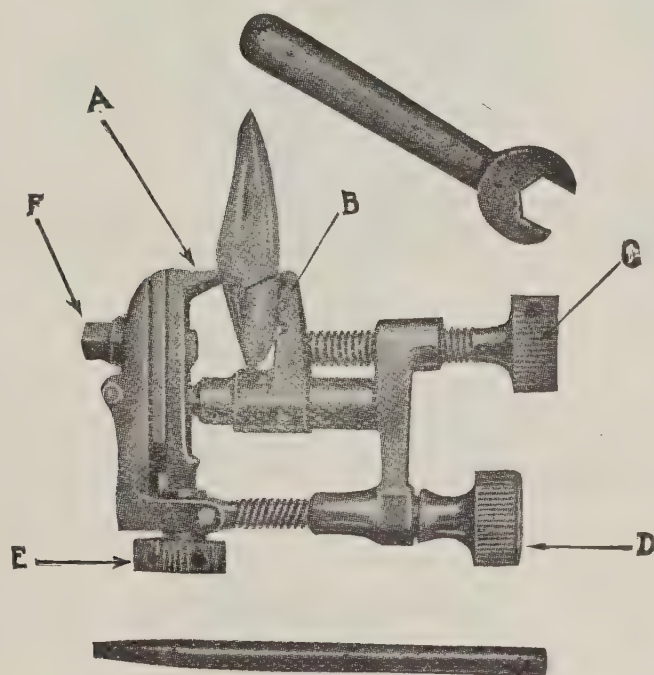
SEND US AN ORDER NOW

Ash's Popular Stopping

Mosley Crown Remover

An Ideal Appliance for Removing
Crowns from Roots.

Registered.



Natural Size.

The Mosley Crown Remover is the only instrument yet devised for removing Dowel Crowns from the mouth. Its primary object is to remove these crowns without in any way injuring the root. This is accomplished quickly and painlessly. In most cases the crown remains uninjured and can be used again if desirable.

A slight turn to the right of Thumb Screw E removes the Crown, one Wedge Tongue pulling the Crown downwards, the remaining two supporting the roof.

A. Wedge Tongues 3

B. Vice Jaw

C. Thumb Screw

D. Thumb Screw

E. Thumb Screw

F. Jam Nut

Complete directions with each Remover.

PRICE - - \$5.50

Medicine Bottles



A nice assortment of these bottles all labelled, makes a good impression. The labels on these bottles are burned on and are therefore practically indestructible.

We carry a good assortment of these labelled for the most popular drugs, but we will have any label burned to your order.

In Neat Cardboard Box, Each 40 Cents

MOUTH MIRRORS



Since advertising our CONE SOCKET MIRRORS at 25 cents each in previous issues, we have sold many hundreds of them.

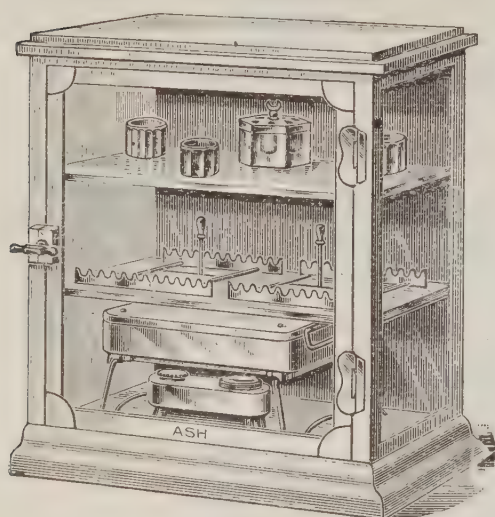
We want to attract your attention also to our

METAL HANDLE MIRRORS

25 CENTS EACH

We have a fine stock of these and can supply them either PLAIN or MAGNIFYING in the various sizes,

A request postal will promptly bring one to you.



ASH'S No. 4 ASEPTIC CABINET

With Metal Back and Metal Frame
Enamelled White; Glass Front
and Sides and two Plate Glass
Shelves.

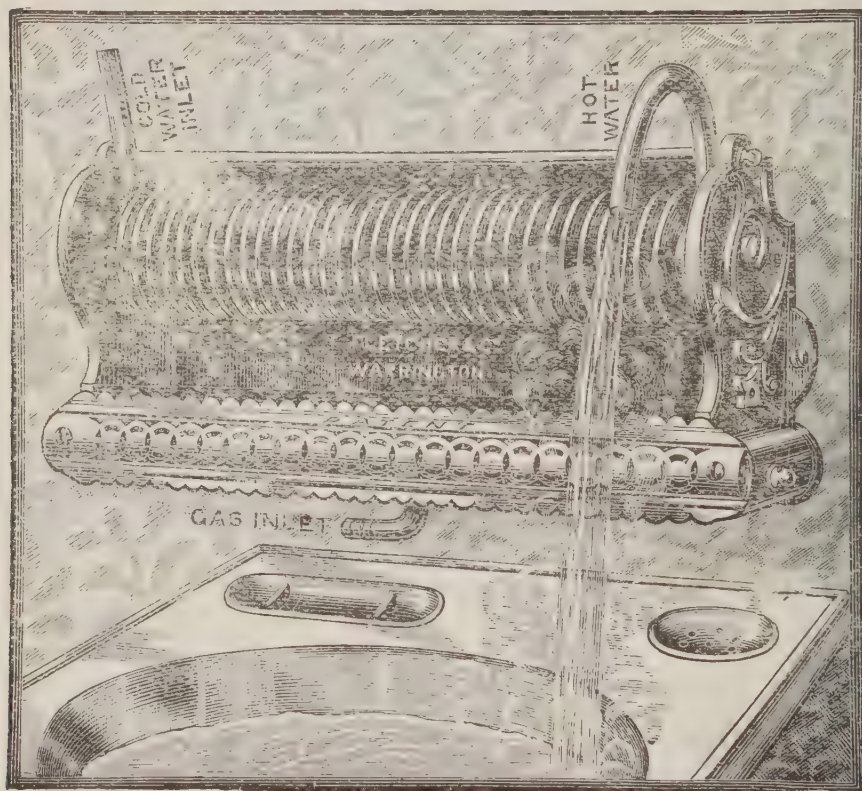
Dimensions: 17 in. high 12 in. wide,
8 in. deep.

From these measurements it will be seen
that this Cabinet is a convenient size for
standing on a mantelpiece, an ordinary
shelf, or a table. It is of British manu-
facture, strongly made, and well finished.
It will hold a good number of instruments
and sundries.

Price, empty - - - - \$12.00

With word "Sterilizer" in gold \$13.00

INSTANTANEOUS WATER HEATER

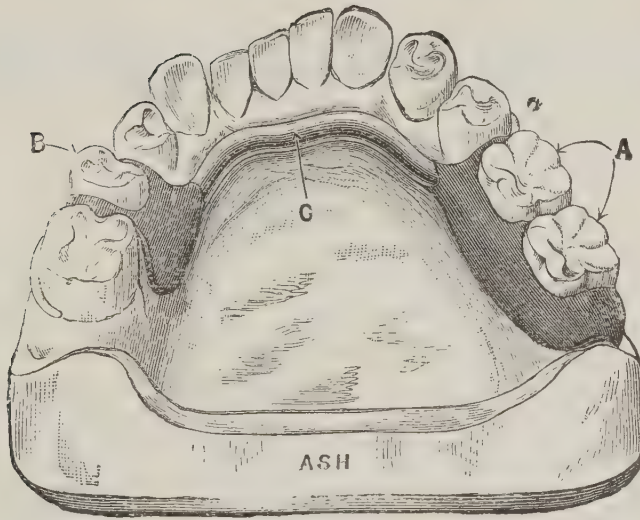


Gives a steady stream of nearly boiling water. A $\frac{3}{8}$ -inch clear
bore gas supply is sufficient for the heater.

Price - - \$11.50 | Price, N.P. - - \$14.00

ASH'S OVAL GOLD CASED WIRE

For Bar Lowers



Bar Lower Dentures have come into universal demand. Note some of their advantages.

No tendency to push teeth outwards.

Greater cleanliness.

Less bulk.

Greater rigidity.

Per dwt. \$.40

BORITH

An excellent preparation to recommend your patients for cleansing Dentures. It is a thoroughly reliable preparation.

Price \$2.00 doz.

ZIMO

The best obtundent on the market for the painless extraction of teeth and minor surgery; Antiseptic and Germicidal. Can be used in all cases; safe and effectual. No bad after effects. Once used, always used. "ZIMO is a great practice builder," as everyone says who has used it. 4 oz. bottle, **\$1.00**; 6 bottles, **\$5.00**. Every bottle guaranteed. Try a bottle; if not all right send it back and get your money.

Manufactured and put up by

Dr. S. T. WHITNEY,

St. Stephen, N.B. Can.

General Agents:

CLAUDIUS ASH, SONS & CO. Ltd.,

11-13, Grenville Street, Toronto, Ont.



**EXTRA
THIN**

MIMMACK'S CELLULOID MATRIX STRIPS.

In addition to the regular thickness Mimmack's Celluloid Strips as universally employed by the profession, we are now offering

MIMMACK'S STRIPS—"EXTRA THIN"

40 strips to the box—in convenient lengths as heretofore, at 25 cents the box. When ordering specify **"Mimmack's Extra Thin."**

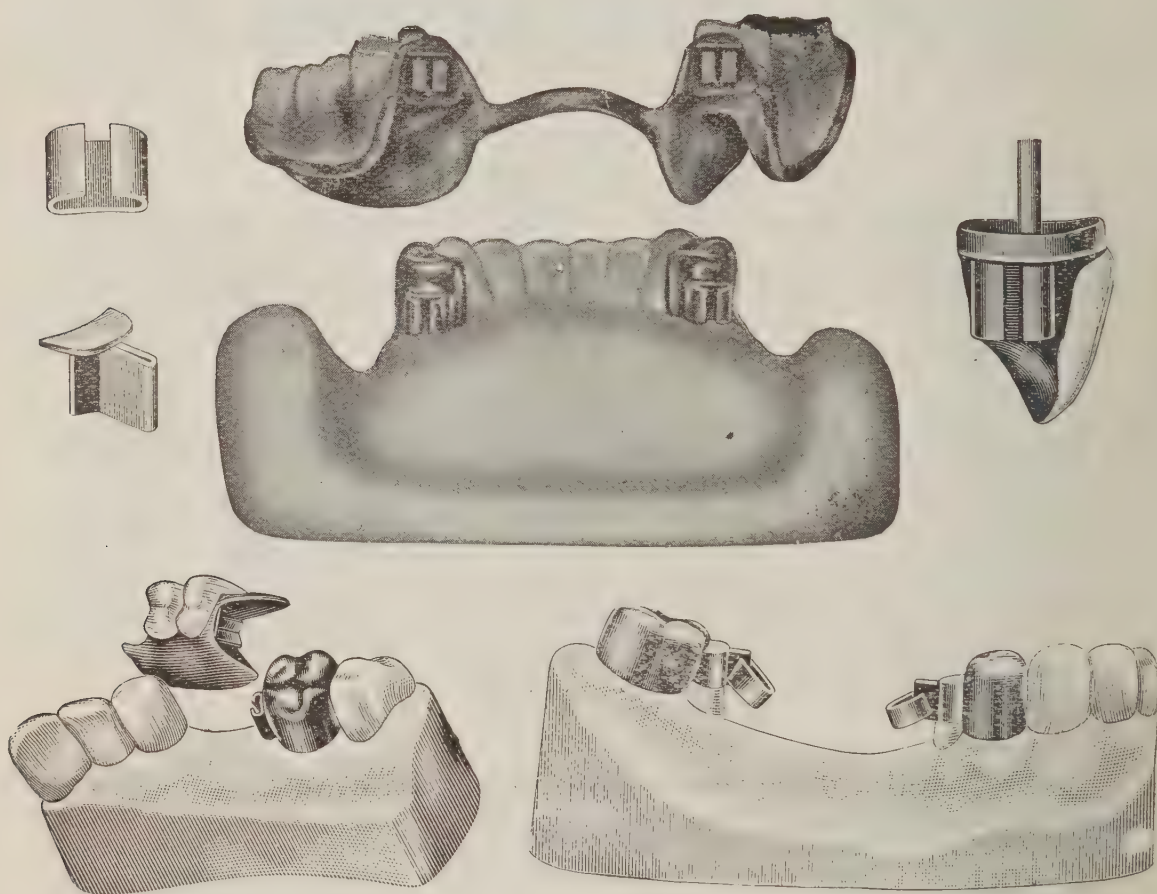
We will continue to supply "Mimmack's REGULAR Strips" at 50 cents the box of 100 strips, unless "EXTRA THIN" is specified.

BUFFALO DENTAL MANUFACTURING CO.
BUFFALO, N.Y. U.S.A.

CHARLES L. DALY

The X. L. C. R. Dental Laboratory

The illustration shown below gives a clear idea of
THE MORGAN ATTACHMENT.



From this illustration one can readily see the great value of this attachment in many difficult cases.

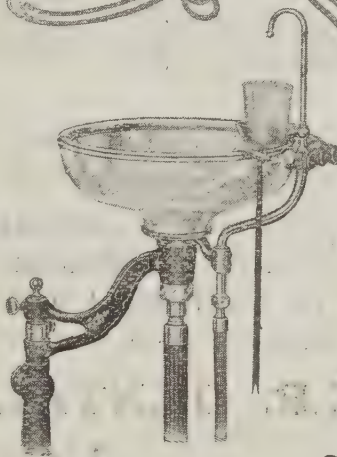
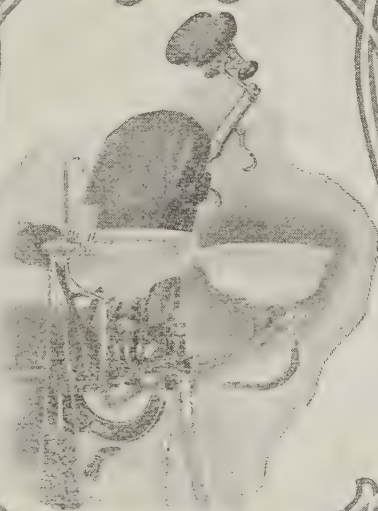
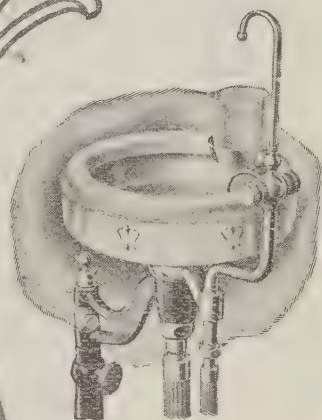
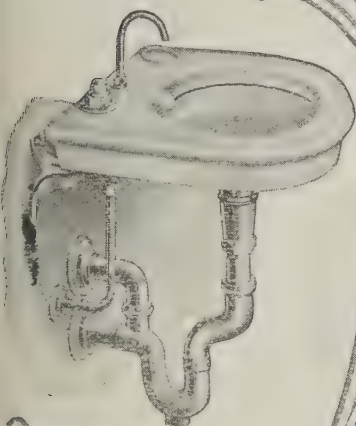
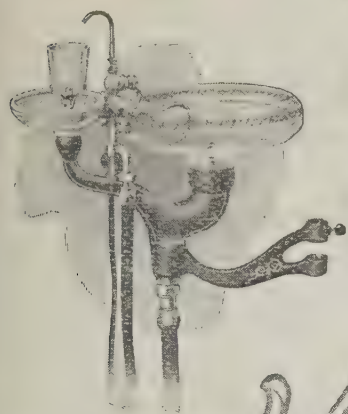
We are prepared to execute this work to the entire satisfaction of the Dental Profession. Let us have your next order for any kind of mechanical work—We will do the work right and have it back in your hands when you want it.

X.L.C.R. DENTAL LABORATORY

2 College Street, Toronto



A.C. CLARK & CO.
CHICAGO
SPITTOONS
FOR ALL
PURPOSES



SEND FOR A SAMPLE OF

Ash's Empire Cement

We have our new Cement product now ready for the market. It is done up in a nice container and the quality is sure to please you. The price is right as you will see by the following figures.

1	Color Packet	-	\$1.00
4	“ “	-	2.50

We have a limited number of sample packets. Send us a request postal before the supply is exhausted.

AJAX MANDREL.

Made in the Consolidated Way.

Just push the pin down and the disk is locked securely.

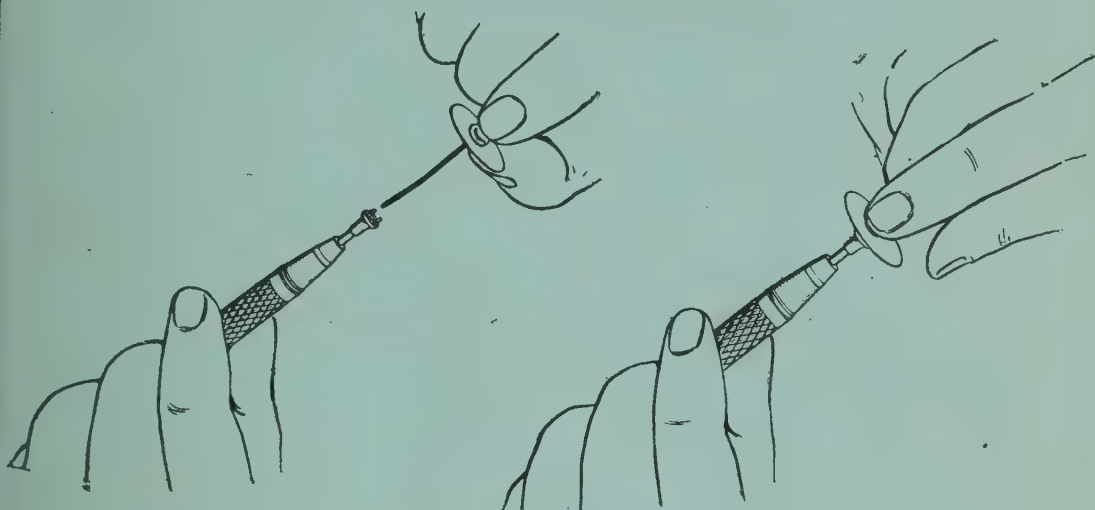
It grips the disk.

It holds it tight.

The pin locks itself when it is pushed down.

Simple, quick and easy.

It can't come off.



If you use any other style of Mandrel you can readily see how superior and much more convenient the **Ajax Mandrel** is

PRICE Each 50c.

Order from your dealer or from our retail branches.

CONSOLIDATED  DENTAL MFG. CO.

NEW YORK
BOSTON

CHICAGO
DETROIT

PHILADELPHIA
CLEVELAND

Ash's Dowel Crowns

If you have not figured out this
Crown proposition, **Do it now!**

The price is right, but it is not only the price that appeals to so many dentists, as the mould and texture of these teeth.

A leading dentist wrote us in February as follows :—

"I see by your advertisement that you have Dowel Crowns in shapes that I have been looking for for some time with negative results, and I am glad to see that you are placing them on the market."

This is only just one of a great many voluntary letters written to us regarding these crowns.

The moulds are exceptional and are adapted to all cases in the human mouth. The texture and strength are unsurpassed by any crown on the market to-day.

The sale that these crowns have enjoyed since they were freely placed on the market has been greater than had been anticipated, and we are selling many thousands of them each week. The scale of prices given below will more than interest you. We would draw your attention to the shape of the pins for these crowns, which have been most favourably received.

Single Crowns	12c. each
100 Crowns.....	\$10 00
500 Crowns.....	47 00
1000 Crowns.....	90 00
Dental Alloy Pins, Single.....	25c. each
Dental Alloy Pins, Bifurcated.....	35c. each
Base Metal Roughened Pin, New Style....	5c. each

Above prices subject to 5% cash discount if purchase amounts to \$25.00 or over. Compare these prices with rates charged for other crowns. You will be surprised at the saving to be had by using Ash's Crowns.

CLAUDIUS ASH, SONS & CO., Limited

11-13 Grenville Street, TORONTO ONT.

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

JULY, 1911

No. 10

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CLAUDIUS ASH, SONS & CO., Limited

5-12 Broad Street, Golden Square

LONDON W., ENGLAND

Canadian Branch—11-13 Grenville Street, TORONTO, ONT.

PHONES NORTH 4800—4801

AFTER HOURS C. 2631

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LIVERPOOL, 78 Mount Pleasant
MANCHESTER, 118a Oxford Road
PARIS, 12 Rue De Hanovre
MARSEILLES, 4 Rue Moustier
LYONS 12 Rue Du President Carnot
BERLIN, Jagerstrasse, 9
HAMBURG, Gansemarkt, 62 and 63
FRANKFURT, a/m Borsenplatz, 7
MILAN, 11 Via Monte Napoleone
AMSTERDAM, 149 Weteringschans
VIENNA, Spiegelgasse, 2

BUDAPEST, Ferencziektere, 4
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NEW YORK, 30 East Fourteenth St,
TORONTO, 11 and 13 Grenville Street
ALEXANDRIA, Trieste St. No. 1
CAIRO, 4 Taher Street, Opera Square

BRESLAU, Gartenstrasse, 22

Proper Retention of Lower Dentures

Is difficult in the majority of cases.

We offer you now a most satisfactory
retainer in

Galloway's Suction

This suction is successfully used in Great Britain, and we now have a stock in Toronto.

\$1.00 EACH

SEND US YOUR MAIL ORDER NOW

Ash's Canadian Monthly Circular

VOL. I.

TORONTO, JULY 1, 1911

No. 10

HINTS AND AIDS IN THE CONSTRUCTION OF CAST GOLD FILLINGS

By Prof. Wilhelm Sachs, of Berlin.

A constant accompaniment of the invention and introduction of new methods and materials in dentistry is their exaggerated or false employment. A few examples will suffice to prove what is so well known. Without reason or plan, amalgams are frequently employed even to-day in the front teeth of young persons, without regard to the ugly deforming discoloration of the tooth substance. There are, of course, cases in which it may be proper to put amalgams in front teeth, but these are exception to the rule, and to refer to them would not fit in the framework of my disquisition. Experience long ago taught us that amalgams are not capable of fulfilling their conserving purpose in teeth of soft structure and in cavities the walls of which are particularly weak. Notwithstanding this, we may daily observe how sins are committed against this well-known fact. Elementary errors of this sort only too fully contribute to discredit the value of dental achievements.

The porcelain filling and silicate cement craze often led to considerable damage to the teeth entrusted to our care. It must not be forgotten that even the unconsidered employment of these filling materials contributed to an unduly rapid judgment of their real value. Often, after a few failures, their good qualities were not sufficiently realized, otherwise there would be no explanation of the fact that many dentists have turned entirely away from porcelain and silicate cement and have banished these by no means valueless products from the store of the materials in their practice, although, in my opinion, they deserve to be designated as very valuable when they are employed with care in suitable

situations, as is the case with all our other filling materials. By "suitable situation" I understand such cavities as permit of the material employed being utilized to the best advantage and, at the same time, to hide its defects or to reduce them to a minimum.

Notwithstanding their many defects, amalgams and cements captured at one bound the favour of the practitioner and his patients, on account of their extremely easy working; and porcelain filling made its capture owing to its beautiful tooth-like appearance. In contradistinction to the victorious march of these materials, cast gold filling has only slowly forced its way into the practice of the dental surgeon, although it has been generally known for five years, and has been considered by everyone who has employed it frequently in practice as a considerable advance; indeed, it has been praised as marking an epoch in conservative dentistry. A cast gold filling is not a plastic material which can be easily worked. Its construction requires experience, great exactitude in execution, and its cost is considerable in regard to material—points which only make it appear suitable for the *praxis aurea*. He, however, who possesses that degree of conscientiousness for the weal of his patients which must self-evidently be assumed to exist—he who has absorbed in his flesh and blood the honest endeavour to maintain permanently, as far as possible, the masticating apparatus entrusted to his care—will not mind trouble and labour to achieve the best.

It is not possible to construct cast gold fillings for those of slender means, for the maintenance of their teeth, owing to the high cost of the material, but this must not be a reason for neglecting to use any other material which may not possess the beautiful rich appearance of gold but which runs it very close in conserving qualities. Fine silver is such a material. It can be easily cast, and its softness enables us to bring the edges of the filling into intimate contact with the edges of the cavity by means of hand and engine malleting. It oxidizes in the mouth and after a short time looks grey, often black, but this is only an aesthetic defect which is less disturbing than the discoloration of those amalgams the oxide of which is transmitted to the substance of the teeth. Discoloration of the tooth substance is avoided in a cast fine silver filling by the thin layer of cement which serves as the fixing material. As a rule, a cast silver filling, like amalgam, for aesthetic reasons, should not be employed in front teeth, although in particular cases exception may be recognized as justifiable. I am of the opinion that the cast filling, when it is the right situation, is not capable of replacement by any other material, especially in large cavities in the

molars and premolars; on their buccal, masticatory and approximal surfaces cast fillings form a secure protection against recurrence of caries, as far as we are at all, up to the present, capable of ensuring such protection. Gold foil filling alone is a reliable permanent filling which competes with the cast filling; indeed, it certainly surpasses the cast filling in many cases. Cast filling possesses the very considerable advantage that the simplicity of its construction grows with the size of the cavity, whereas the difficulty of construction of a foil filling increases considerably with the size of the cavity which we have to fill. The cast filling can be employed in positions in which the insertion of a foil filling, combined with the greatest difficulties, is often entirely excluded—it may be on account of the circumference of a cavity, or owing to its deep reach under the cervical edge it is impossible to maintain it in a dry state by means of cofferdam while it is filled with foil. The insertion of a cast filling takes up only a very short time, during which, even in a mouth there is a profusion of saliva, the cavity can be kept dry by means of cotton rolls, serviettes and the saliva ejector. Extreme enthusiasts have prophesied that the cast gold filling will entirely abolish the foil filling. I cannot agree with this view, because for small and medium sized cavities the foil filling will not lose its value—a value which has been proved by decades of time. In very large complicated cavities for which the cranky gold filler prefers amalgam to the cast filling, the conserving effect of the cast filling fulfils all expectations, as far as we are able to judge after our short experience of it. Were we to compare value of a well-inserted foil filling with that of a defective cast gold filling, or inversely, as has been done by the enthusiasts on one side or the other, we should come to quite wrong conclusions which would not help us in regard to our preference for this or that method. I hold to the idea that the modern dentist must be fully conversant with the construction and the correct employment of the cast gold filling. The practitioner who to-day still stands aloof from the cast filling has really a gap in his dental knowledge.

I assume, at the outset, that the preparation of a cavity suitable for a cast filling is known by all, likewise the manner of obtaining the wax shape and the carrying out of the casting. I would like, however, to discuss a few important, apparently secondary, points which to me appear important points—points which, as I have often had opportunity of observing, are left too often out of account. The object of my disquisition is to give slight hints and indications which I look upon as useful and important aids in the construction of cast fillings.

We can only reckon upon the safety of the cast filling when the cavity has been formed in such a manner that the inlay is incapable of being moved by the action of mastication. The observance of this law must never be neglected, if we desire to avoid failures. The cement alone is incapable of permanently maintaining a filling in the cavity if the cavity has been shaped in the form of a shell; powerful masticatory action will push it from its position. Preferably, the approximal, buccal and masticatory surfaces of the molars and premolars are suitable for cast fillings. Lateral fillings must always be enlarged so that they enter into the masticatory surface, in order that the filling may have reliable anchorage. We separate the teeth by means of cotton-wool or gutta-percha if the neighboring tooth is present and the patient can place a sufficient length of time at our disposal. If this is not possible, we must employ the separator. If, however, the separator cannot be employed, for some reason or other, we are able to construct cast fillings without separation—that is to say, suitable cast fillings with a contact points. We grind away a few mm. of substance from the bucco-lingual surface which has to be replaced by a cast filling so that contact of the substance of the teeth which stand side by side is excluded, because only the fillings of both teeth are to touch. Thus we avoid the recurrence of caries. This advantage of a most simple construction of the important contact points of the cast filling cannot be too highly valued. The cavity at the neck of the tooth is shaped, as far as possible, of rectangular form, so that the filling rests upon a flat basis. We enlarge the fissures of the masticating surface to a depth of from $1\frac{1}{2}$ to 2 mm., in such a way that their lateral walls stand nearly parallel to each other and the floor forms an even surface. This enlargement of the masticatory surface which is connected with the original approximal cavity must possess at its final point a dovetail or bulbous shape, because only in this way is the hold of the filling in the cavity safeguarded against powerful masticatory pressure. For the shaping of the cavity we should employ, as far as possible, the small Miller's carborundum wheels and disc, which I cannot too warmly recommend. Miller's carborundum discs are most excellent instruments for the first portion of cavity preparation. Their small and manifold forms enable us to work quickly, and, in regard to the patient, humanely. They are very strong, and can be worn down to the last vestige. For the construction of rectangular surfaces of the cavity walls and for the floor of the cavity cylinder-shaped burs should be employed. The burs suggested by Guttmann for ground porcelain fillings can be usefully employed for this purpose.

The cavity walls must not only be carefully smoothed, but they must be obliquely formed at a slight obtuse angle. A too shadow gradient of the cavity edges affords a too thin lamella of the filling which can be nicely attached to the tooth substance; it is, however, easily injured during mastication, and thus offers a point of attack for caries.

We should seek to avoid the too free removal of good tooth substance for the sake of obtaining a cavity from which the wax form can be easily removed. By filling up overhanging walls with cement, we are enabled, without sacrificing an excess of tooth substance, to produce the requisite shape of the cavity. Even weak walls of teeth can be left if we grind away their surfaces which are exposed to the masticatory pressure to the extent of from 1 to 2 mm., and replace them correspondingly in the cast filling, whereby we obtain a good protection of the weak wall. The construction of the wax form often causes considerable difficulty to the inexperienced operator when he has to deal with complicated cavities. It depends upon the shape and the position of the cavity whether we shall choose the direct or the indirect method to obtain the wax form. Generally, I prefer the direct method. Only with very complicated cavities which are difficult of access do I employ the indirect method, which, as is known, consists of taking with impression material an impression of the cavity of the tooth, from which the model is cast in Spence's metal. The indirect method is indicated, especially, for the distal halves of the premolars and molars the enlargement of which extends over a portion of the masticatory surface. In order to avoid the dragging of the impression material when we press it home, various small aids are recommended. Roach has suggested metal tubes with a suitable handle, also a copper or aluminum strip about 2 mm. thick, 4 cm. long, 2 cm. broad, each having a spur in the centre of the two longest sides cut out of the plate. We lay the metal strip round the approximal, buccal and lingual surfaces of the tooth, and push the crescent-shaped additions between the tooth and the gum at the cervical edge of the cavity. The warm impression material, in stock form, is firmly pressed into the cavity, and the second spur of the metal plate is bent over against the impression in the direction of the masticating surface, so that the plastic impression material is pressed energetically against the walls of the cavity. I have constructed for myself small open copper rings for taking impressions, which I push over the tooth that is to be treated. If the contiguous tooth prevents the bringing down of the ring at the approximal surface opposite to the cavity, I cut a semi-circle of the ring, so that the

side which is not cut out reaches below the cervical edge of the cavity. I warm the point of a stick, about the thickness of a pencil, which I have constructed of impression material, and press it tightly into the cavity surrounded by the metal. The portion of the impression material which is not stiffened presses the softer point in front of it, and a good impression is thus obtained. After a stream of cold water has hardened the plastic mass, I carefully remove the ring with the impression, only pulling in the direction of the length of the tooth, and utilizing the two spurs, which are provided buccally and lingually, as handles.

The ring with the impression is embedded in Melotte's moldine, the inner surface is painted with vaseline, a small paper ring of about 2 to 3 cm. in diameter and 1 cm. high is put over the ring, and the hollow space is poured full of Spence's metal. Care must be taken to allow the molten Spence's metal to cool in the metal spoon until the mass becomes a thin liquid. It is a peculiarity of this metal that after the melting it assumes a viscid liquidity and that it only becomes easy flowing in the cooling process. If we pour it prematurely, air holes and hollow spaces will occur in the metal.

On the model, we form the wax shape, which is then placed in the natural cavity and completed, and any inexactitudes of the edge closure are removed by smoothing them down with a heated instrument. In many cases we should perhaps prefer the direct method, as we are then able to construct the wax shape in the tooth cavity itself. The moisture of the cavity will perhaps prevent the sticking of the wax to the tooth. I prefer, however, to dry the cavity and its surroundings and then to paint it with a thin layer of vaseline. Saliva, and more particularly blood, in the cavity unfavourably influence the exactitude of the wax shape; they produce roughness in the cast filling which prevent correct edge closure, especially at the cervical edge. Many dentists put melted wax in the cavity, or press into the cavity a large piece of wax which they soften on the surface over the flame. I have found that this method is not suitable in all cases, because the molten wax contracts during the cooling down, from which may result an inexact edge closure, which, at spots that are easily visible, may be controlled and corrected with facility; but at the cervical edge, when the neighbouring tooth is still standing and the cavity reaches under the level of the cervical edge, it can only be controlled and corrected with difficulty. For approximal cavities of the premolars and molars, when I do not employ the indirect method described, I use Ivory's matrix, with the aid of which the normal contour of the tooth can be constructed with-

out difficulty. It is advantageous to form for one's self, according to the shape of the cavity, a little wax cone, to soften it in hot water, and then, with the point directed towards the floor of the cavity, to press it into the cavity. In deep cavities it is necessary to press it still more with an instrument which has a large head, so as to obtain the most perfect attachment to the walls of the cavity that it is possible to obtain. This method can only be employed when we have applied a matrix which prevents the expression of the wax over the lateral edges of the cavity. If it is necessary to add still more wax to the first large piece, we add a hard piece and melt it by means of a heated stopper. Sometimes the newly added wax does not combine with the preceding layer. In that case we must previously wash with pure alcohol the wax layer in the cavity and dry it, in order to render possible the union of the two layers. To exfoliate the wax layers destroys the shape. We remove the matrix gently, and fashion the inlay as smoothly as possible by careful scraping away of the surplus wax. Any inexactitudes at the edge are corrected with a heated spatula, by melting away the wax somewhat over the cavity edge. The removal of the surplus wax must only be done after the wax has been completely hardened by means of a jet of cold water. For the scraping away of the surplus wax I employ the instruments suggested for this purpose by Boedecker—the whole set, however, is not necessary. Nos. 2, 3 and 6 are perhaps sufficient for all cases. If the antagonizing tooth meets the inlay—which we can find out not only by simple occlusion of the maxillae, but likewise through the masticatory movements—we scrape away on the masticatory surface as much of the wax as, in the articulation, leaves a free space of at least the thickness of a visiting card. According to our experience, gold inlays without this removal of the wax are mostly too high, so that it becomes subsequently necessary to cut away gradually, the gold inlay in order to remove the disturbances in articulation. The imitation of fissures on the masticatory surface I consider quite superfluous. The smoother and the more complete the wax inlay is, the less need will there be for subsequent trimming when the gold inlay is finished. The removal of the wax from the cavity must be carried out with very great care. The slightest injury produces failure. If the withdrawal of the wax shape requires force, we may be sure that the cavity walls exhibit undercuts. The best thing to do in such a case is to correct the defects of the cavity and to construct a new wax inlay. Kuhnen has suggested a method for the removal of the wax inlay from the cavity which is well worthy of recommendation. We take a piece of gold wire about $1\frac{1}{2}$ cm. or 2 cm. long, 22 or 24 carat, approximately of the thickness of very thin

binding or ligature wire, and at the end of it we form a knot by bending it over, which knot, when heated, is inserted into the wax shape. By means of careful and slow pulling at the projecting part of the wire shape comes out of the cavity without suffering damage. The casting point is inserted into the wax at the spot where the contact point exists. The gold wire is embedded at the same time, and during the finishing of the gold filling it is removed from the filling. Care must be taken not to overheat the casting point, and to insert it as far as possible away from the edge in a thick layer of wax. To neglect this precaution may easily lead to the shape being spoiled.

The wax shape can be easily made hollow inside by means of Roach's suction apparatus without injuring the edges or the outer surface in the slightest. By hollowing it out we save gold and at the same time produce a roughness on the inner surface which serves for the better attachment of the cement. I omit to deal with the process of casting, as it is not yet finally decided whether pressure or centrifugal force produces the better results; let it suffice that we can attain our object with every form of apparatus which has so far been constructed for the purpose of gold casting. For my own part, I employ exclusively the slinging wheel, with which I have never had any failures. Before the gold inlay is inserted in the cavity, I cut, with a suitable bur, a few small gutters in the walls of the cavity, likewise in the back of the inlay, unless these have already been provided for in the wax shape, in order to get good retaining points for the cement. I employ Harvard cement, which I consider good. I always do the grinding away, smoothing and polishing of the completed cast filling after I have cemented the inlay in the cavity. Inlays which are trimmed outside the mouth may easily be made defective around the edges. Trouble should be taken to bring the edges of the cast filling into the most intimate contact with the edges of the cavity. Hand polishers, engine polishers and malleting against a smoothly polished inlay driver are very suitable means for this purpose. I employ 23-carat gold for casting gold fillings. It is sufficiently soft to admit of being forced over the cavity edges, and yet not so soft as 24-carat gold, which, under the action of mastication, soon assumes a rough and therefore an objectionable looking surface.

I should like to mention a few particular cases which require special treatment. If the lateral cavity of a molar or premolar extends so deeply under the gum that it is difficult—indeed, often impossible—to obtain an exact impression of this portion of the cavity, I apply Ivory's matrix, which enables me to obtain a clear

view of the field of operation and keeps the cavity dry for a sufficiently long period for about a third of the cervical portion to be filled with amalgam. After one or two days, as soon as the amalgam has completely hardened, I make a wax shape of the remaining portion of the cavity and construct a gold inlay. I am then certain that the cervical edge of the cavity is protected against recurring caries, which cannot be maintained with safety in regard to an all-gold inlay.

Further, such a case as the following appears to me to be of interest:—If the approximal cavity, including the masticatory surfaces in teeth with living pulps, does not offer sufficient security for the effective fixing of the gold filling in the cavity, I recommend drilling into the masticatory surface of the tooth substance a canal from 3 mm. to 4 mm. deep and about $1\frac{1}{2}$ mm. in diameter. In this canal we insert a platinum-iridium wire of corresponding thickness, which, when united with the filling during casting, produces an extraordinarily safe anchorage. In dead teeth we should naturally employ a post reaching into the enlarged cementum of the root.

In conclusion, I do not, of course, pretend that this disquisition is either exhaustive or new. The hints which I have given here proved in my experience to be worthy of adoption. I have remarked, and here repeat, that the inexperienced operator, by overlooking small and apparently unimportant details, has to battle with failures which lessen or entirely destroy his joy in the splendid work of cast gold fillings. I have no doubt that many a practitioner with essentially different methods of construction to mine obtains equally good results, and to obtain an expression of opinion on this question is perhaps the chief, if not the only, advantage of my paper.

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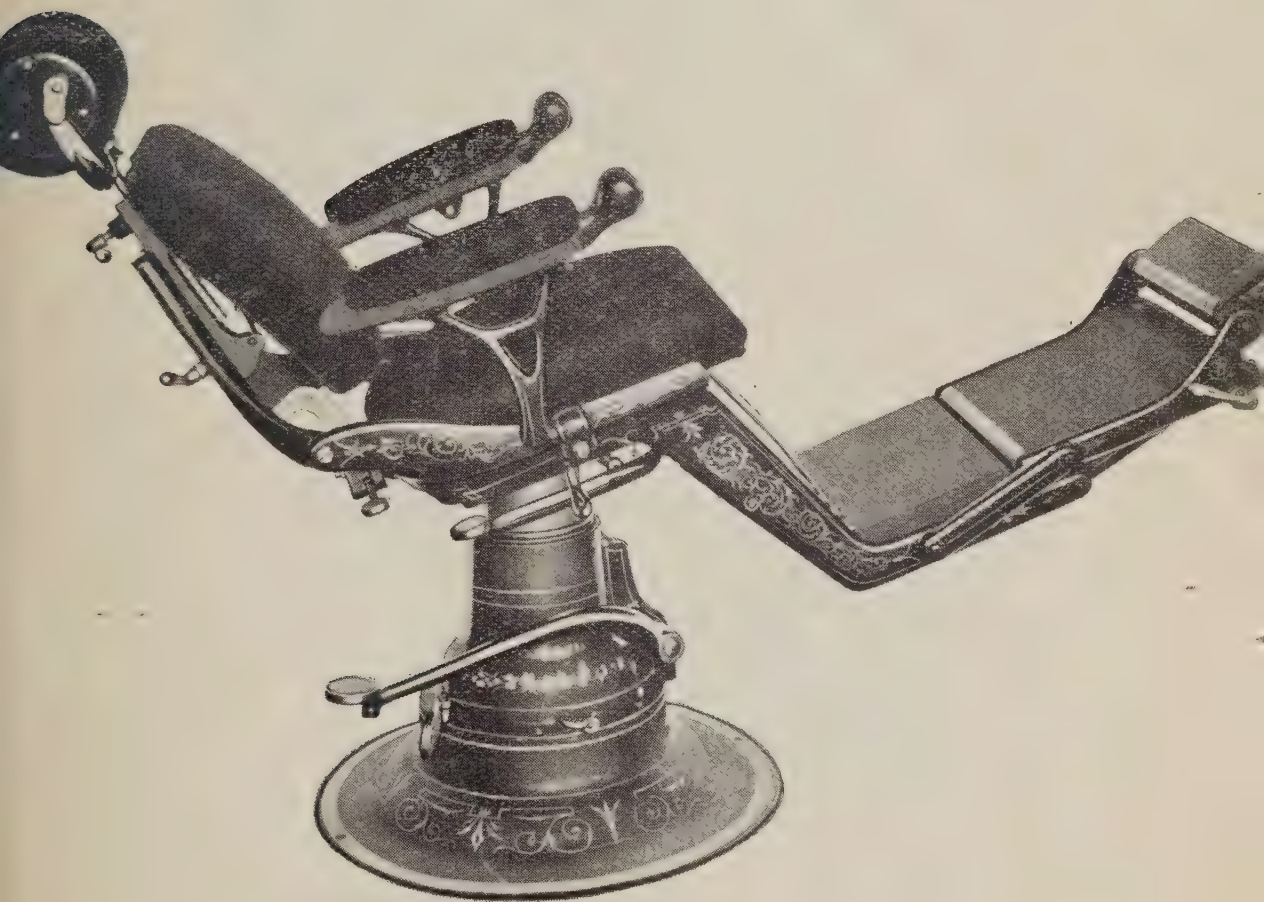
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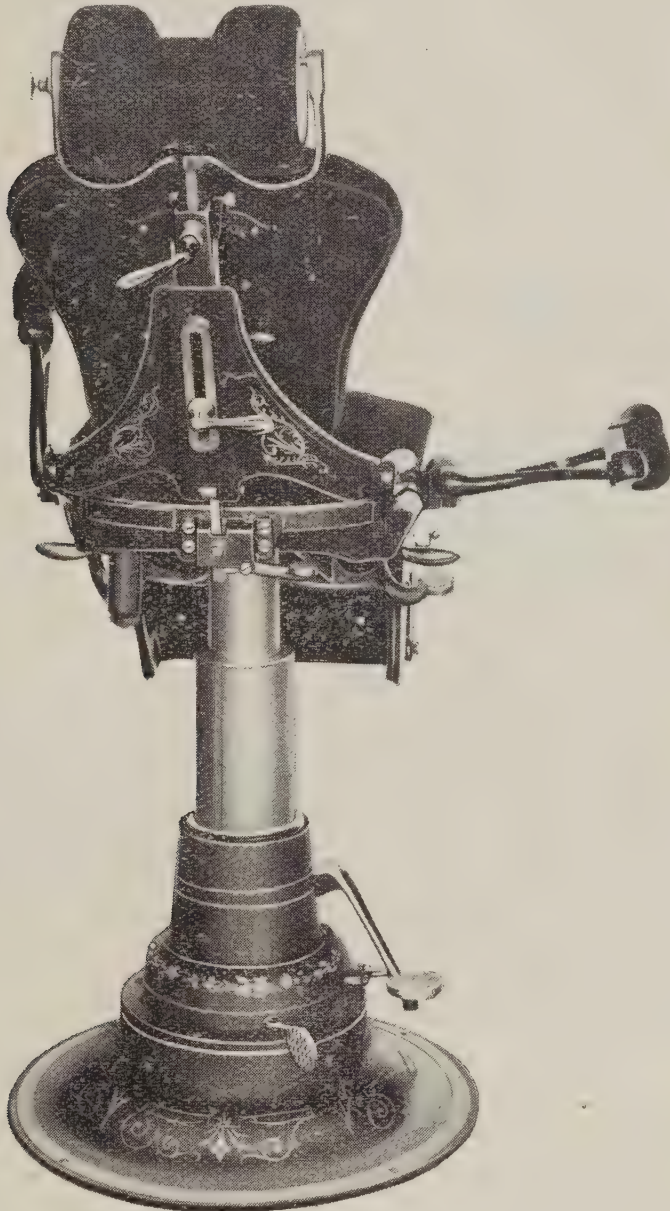
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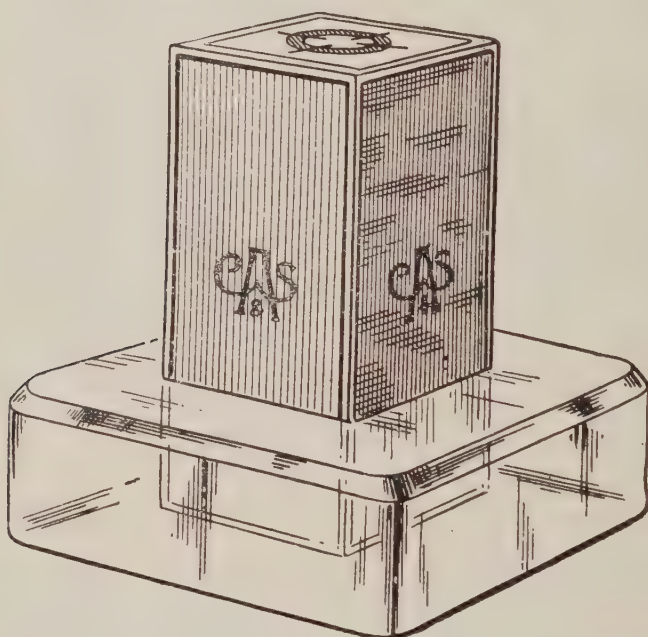
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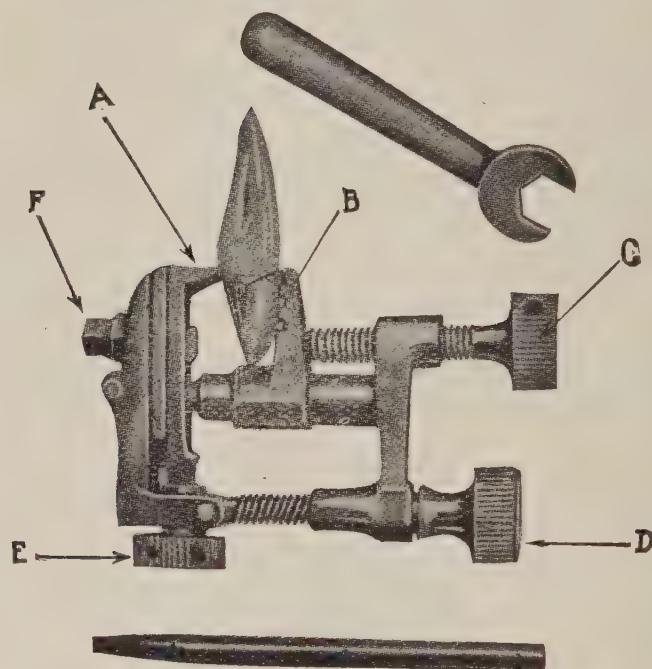
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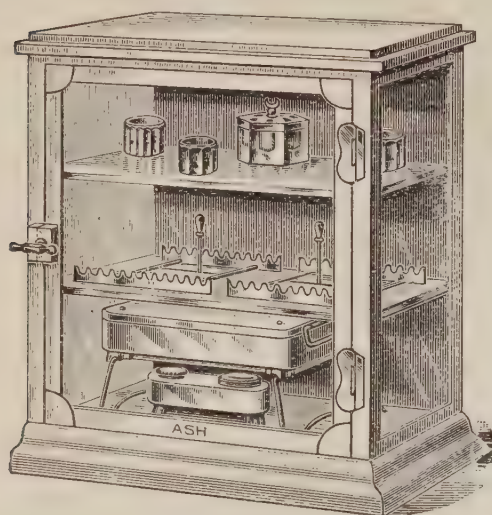
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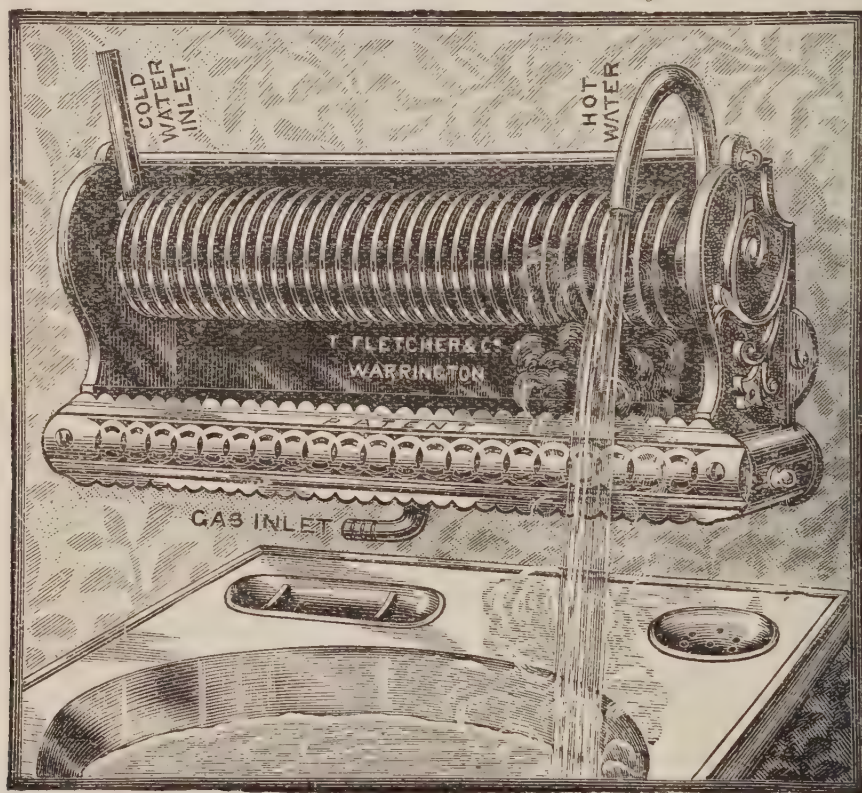
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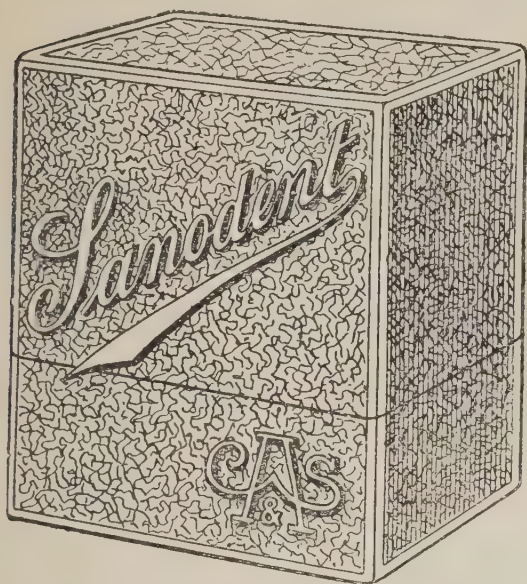
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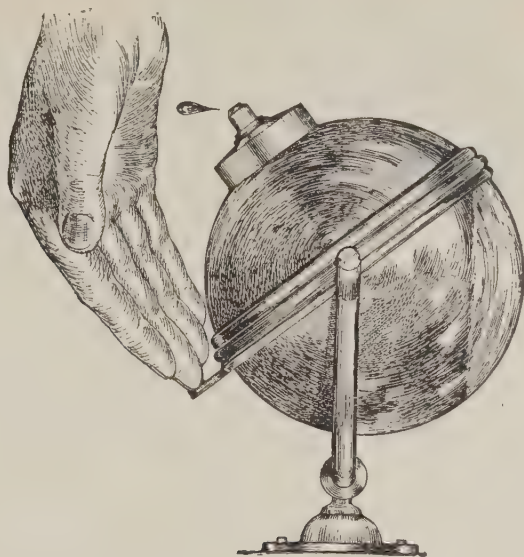
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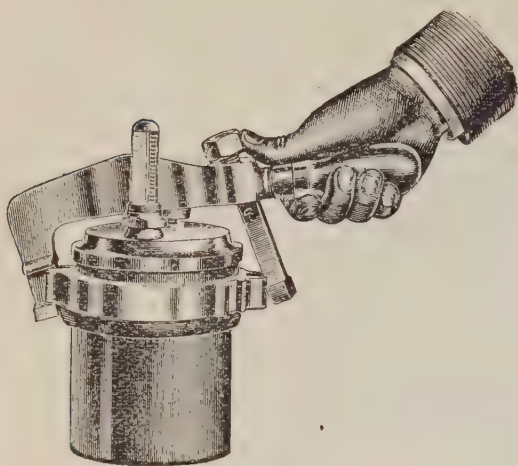
If by means of the BEAU BRUMMEL LIQUID SOAP DISPENSER, the only mechanically-perfect, successful device which furnishes a measured quantity of absolutely uncontaminated soap from a practically air-tight dispenser, each time it is used.

Embellishes the washstands, eliminates soap waste and mussy soap dishes. Requires no care and attention.

As for the soap itself, we have perfected practically a neutral soap, which being prepared from pure vegetable oils, is the purest form of soap that can be had, free from acids, animal fats and tallow, and it is not only a better detergent and cleanser than cake soap, but is an emolient to the skin, refreshing, stimulating and invigorating.

The Beau Brummel Liquid Soap System is the only one whereby the Dentist can assure absolute asepsis in using soap, in his offices.

PRICES :	HOLDERS	-	-	-	-	\$3 25
	Soap, per Quart	-	-	-	-	1 75
	Soap, per Gallon	-	-	-	-	4 25



Plenty of Strength combined with Portability

The Lewis Vulcanizer is strongly constructed ; the forged steel cap and bar practically unbreakable, and the pot of solid drawn copper. At the same time it is so light as to be readily lifted from place to place, entirely independent of the heater.

If you find it necessary to relieve the steam pressure, that annoying process may be completed where the escaping steam will not vitiate the air of the laboratory or operating room. That would be an impossibility were it necessary to permanently secure the Vulcanizer to the bench.

It doesn't occupy valuable bench space when not in actual use, but can be set aside temporarily where it will be out of the way until again needed. In a word ; it is so strongly built as to be absolutely safe by a big margin, and on the other hand, so light as to require no permanent location.

THE PRICES :

Twenty, Twenty-Two Fifty, and Twenty-Five Dollars

AT YOUR DEALERS.

Tell us you are interested so we may let you have the complete story.

BUFFALO DENTAL MANUFACTURING CO.
BUFFALO, N.Y. U.S.A.

B O R I T H

An excellent preparation to recommend your patients for cleansing Dentures. It is a thoroughly reliable preparation.

Price \$2.00 doz.

Z I M O

The best obtundent on the market for the painless extraction of teeth and minor surgery; Antiseptic and Germicidal. Can be used in all cases; safe and effectual. No bad after effects. Once used, always used. "ZIMO is a great practice builder," as everyone says who has used it. 4 oz. bottle, \$1.00; 6 bottles, \$5.00. Every bottle guaranteed. Try a bottle; if not all right send it back and get your money.

Manufactured and put up by

Dr. S. T. WHITNEY,

St. Stephen, N.B. Can.

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11-13, Grenville Street, Toronto, Ont.

Pyorrhea can be Cured !

Once again we have proven our claims at the
LARGEST PYORRHEA CLINIC EVER HELD.

The Hundreds of Dentists who attended the NATIONAL MEETING saw the results of the DENTINOL and PYORRHOCIDE TREATMENT IN CONNECTION WITH INSTRUMENTATION as shown on the numerous cases treated at our Cleveland Clinic.

Our Claims were proven on cases selected by Cleveland Dentists. Our Clinicians treated all cases presented by Dentists, regardless as to how far the disease had advanced.

No case was under treatment more than six weeks. Inflamed, pus discharging gums were put in a normal condition of health. Loose teeth (when sufficient process remained), were tightened. Every case treated was shown. Teeth with practically no process left could not be held in place without splints, but the gums were put in a firm, healthy pink condition. EVERY CASE SHOWED BEAUTIFUL RESULTS.

OUR CLINICIANS USE

DENTINOL (applied to inflammed gum surfaces and flooded into pus pockets).

THE IMPROVED D. P. SCALERS (set of 12 instruments for removing deposits).

THE DENTINOL PERFECT SYRINGE (for reaching the bottom of pockets with Dentind).

PYORRRHOCIDE (was used by all PATIENTS as a medicated prophylactic dentrifrice in co-operating both in effecting and maintaining results).

The preparations are non-poisonous and non-secret, and are sold and guaranteed satisfactory at ALL DENTAL DEPOTS.

You owe it to your patients and yourself to cure diseased gums—
You can do it, and it pays.

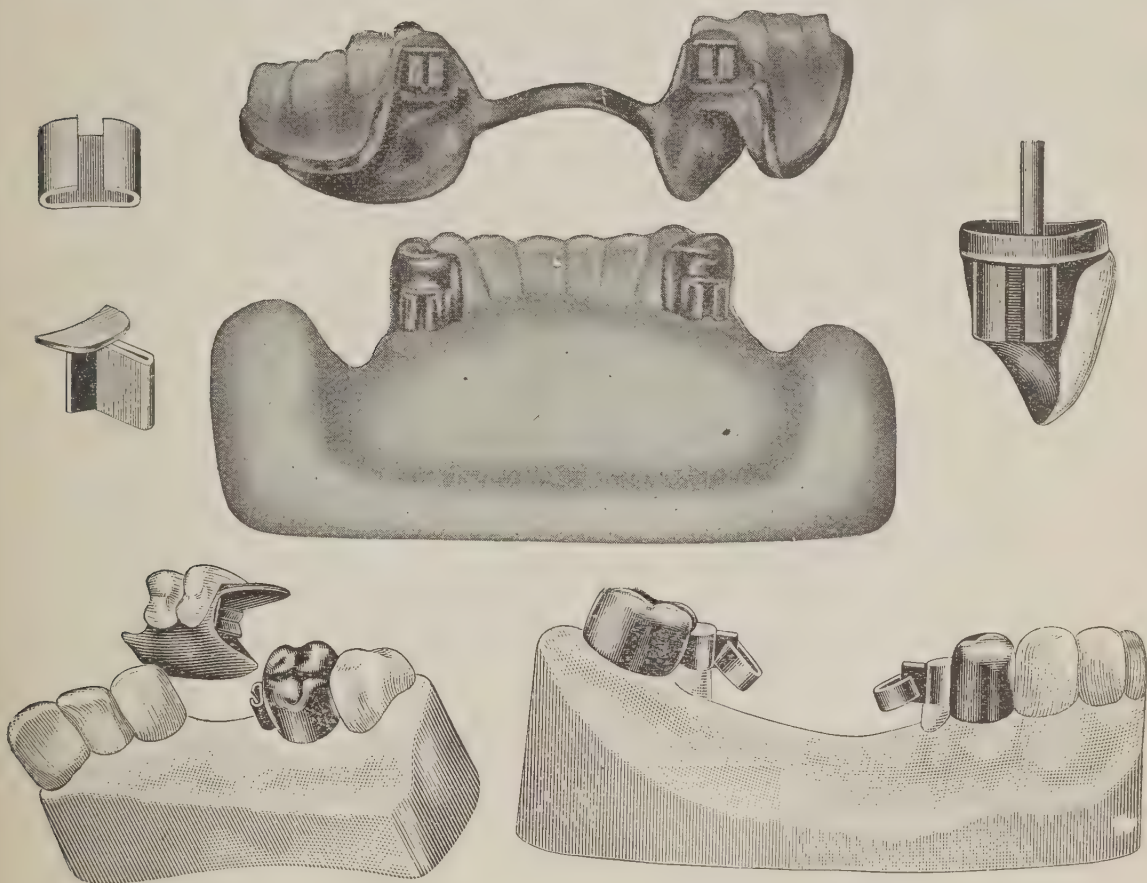
The Dentinol & Pyorrhocide Co.
1 UNION SQUARE, NEW YORK CITY.

CHARLES L. DALY

The X. L. C. R. Dental Laboratory

The illustration shown below gives a clear idea of

THE MORGAN ATTACHMENT



From this illustration one can readily see the great value of this attachment in many difficult cases.

We are prepared to execute this work to the entire satisfaction of the Dental Profession. Let us have your next order for any kind of mechanical work—We will do the work right and have it back in your hands when you want it.

X.L.C.R. DENTAL LABORATORY
2 College Street, Toronto

**This is a Cut of the New Model
Double Bowl CLARK SPITTOON**



Out of the 800 Dental Salesmen in this country, 799 know this is the very best Spittoon made, the other fellow hasn't woke up yet.

BUY FROM YOUR DEALER.

A. C. CLARK & CO.
CHICAGO.

Consolidated Diatoric Teeth

LIVE TOOTH APPEARANCE

CONSOLIDATED  DENTAL MFG. CO.

PHILADELPHIA
CLEVELAND

Ash's Dowel Crowns

WE have just opened up a nice shipment of Crowns and Crown Cases. We can send you a nice selection of shades and moulds that cannot fail to please you.

Case with **200 Crowns** - **\$20.00**

We have a fine selection of these Crowns in Molars and Bicuspids also.

Send us that Mail Order NOW

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AFTER HOURS C. 2631

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

AUGUST, 1911

No. 11

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Maritime Dental Conventions.
Second-Hand Goods.
Advertising Section.
New Goods and Novelties.

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The use of the Solbrig-Platschick Press in full Aluminum or Gold Dentures will be gladly shown you in casting practical cases.

Claudius Ash, Sons & Co., Limited

11-13 Grenville Street

TORONTO

Ash's Canadian Monthly Circular

VOL. I.

TORONTO, AUGUST 1, 1911

No. 11

SEDATIVES IN DENTAL PRACTICE*

By Professor Dr. Jung, of Berlin.

The question of calming an excited patient, who is anxiously awaiting his turn in the reception room to undergo an extraction or some other painful operation, is by no means one of secondary importance. Even if we adhere in the first place to the principle that the suggestive personal influence of the dentist should always continue the predominating feature, there still remains a number of indications which justify recourse to medicaments.

Time and circumstances do not always make it possible for the dentist to receive every timid patient at once; he is often enough obliged to keep those who have not definite appointments waiting for a quarter or half an hour. If such a patient has to sit in the reception room, nursing his painful tooth, the circumstance is not calculated to render him more tranquil. But even among those patients whom the dentist is expecting at stated times, there are not a few who look forward to the commencement of the sitting with fear and trepidation, although this is perhaps by no means the first occasion upon which they have visited the dentist. Passing mention may also be made of the cases in which the well-educated patient stands a painful operation with fortitude, but nevertheless breaks down at the end of it, because his nervous system is not different from that of the modern normal man—in other words, he is not capable of enduring too much stress.

*Translated from the Deutschen Zahnärztlichen Zeitung.

In almost every one of these cases we know too well that we can, chiefly by a friendly and quiet demeanour and by a few encouraging words, contribute a great deal towards calming the patient and thus preparing him for the ordeal. But, as already mentioned, the necessary time is not always at the dentist's disposal, and he is therefore compelled to look round under such circumstances for other soothing agents. We have such soothing agents, for instance, in the range of sedative drugs (morphia, opium, bromine, etc.) and among the stimulants (alcohol), and the question naturally arises which of the modern preparations of scientific practical dentistry is most suitable for our special purposes.

The conditions which we dentists must demand from a sedative, in the pharmacological sense, can be summarized as follows:—

1. The remedy must act promptly—i.e., it must exhibit a soothing influence, say, within half an hour;
2. It must retain that influence for not less than an hour and, if possible, for not longer than three or four hours;
3. It must also be applicable in the case of children and delicate persons—that is, it must not give rise to injurious consequences which only a strong constitution can easily withstand.

These conditions are best fulfilled by adalin, a new preparation of the Bayer Company. It is tasteless, and in doses of from 5 to 10 grains exerts within from a quarter to half an hour a marked sedative action which may, as a rule, last from three to four hours and does not produce any injurious results. Prompt action can be obtained by taking a dose and drinking something hot immediately afterwards (the tablet to be placed on the tongue and swallowed with a cupful of hot milk or hot sugared water; adalin is not soluble in cold water).

We are thus in a position to administer to the anxious patient a dose of this sedative when he enters the waiting-room and to calm him in a very striking manner; as a matter of fact, I have succeeded in more than 90 per cent. of my cases in obtaining with the help of a single dose such a complete tranquilization of timid and nervous patients, that I have always been able to carry out the necessary work afterwards without any difficulty whatever. What this means not only to the patient, but also to the dentist, who has to deal all day long with sensitive clients, hardly needs pointing out.

In a similar manner adalin has proved to be of the greatest utility in the after-treatment of patients, subsequent to lengthy filling operations, etc. Very often the nervous shock in such cases is of serious moment, and it is highly advisable that we should do something to counteract it. This can be done in most cases by the administration of a tablet of adalin before the patient leaves the operating room. In insertions of arsenic, too, this medication is permissible, although I have found that when the pain is particularly severe (acute pericementitis, etc.) the normal dose is not sufficiently strong in a certain number of cases. Under such circumstances the administration of larger doses of adalin (10 to 15 grains) is justified, and it then acts directly as a hypnotic.

On the whole, I have so far prescribed adalin in about 200 cases with the object in view which I have mentioned, and nearly always, as already stated, have satisfactory results been achieved with it. In a very few cases the effect has not been quite reliable, or the remedy has failed me altogether. These cases have related, in the main, to powerful but nervous men, and only twice to female patients; this observation is similar to that made in regard to other sedatives.

My experiments have revealed one very noteworthy "side-effect," viz., that most of the patients calmed by adalin have required, roughly speaking, only about half the ordinary dose of the local anæsthetic which is used in extractions. It is difficult to furnish exact data on this point, as I am seldom in the position of having the same patient in the operating chair on two different days for exactly the same purpose, and I may operate on the one day with, and on the other day without, preliminary treatment. Still, a corresponding practical experience enables me to estimate the conditions with a certain degree of confidence, and I believe that my opinion will soon meet with confirmation. General narcosis, too, takes place much more rapidly after a preceding exhibition of adalin, and it can easily be produced with small quantities of the anæsthetic used.

Although the indication to which I have already repeatedly alluded—viz., the effect of adalin as a soporific upon the central nervous system—bears only a secondary relationship to the employment of the remedy in our particular work, it is nevertheless deserving of special mention. There are many patients who, through nervous excitement of a minor degree, cannot go to sleep especially before or after undergoing some surgical operation. In these cases adalin is eminently suitable, seeing that it can be administered as an innocuous hypnotic without causing the

slightest inconvenience. But there are also a large number of dentists to consider who are, in consequence of their professional work, in a continuous state of irritability, so that they lie in bed awake for many hours before they can obtain the desired rest. Under such circumstances it is advisable to take, half an hour before retiring, two tablets, followed by a hot drink, either in the form of tea or milk, or other suitable fluid.

Then there is a class of patients who, though they fall asleep quickly enough, wake up after a few hours and cannot go to sleep again, or do so only for a brief time. Those who suffer in this way may learn by experience that two tablets of adalin should be taken on awakening, swallowed with a hot drink, and that sleep will generally follow after a short interval. An important feature about adalin is that nervous persons, in whom palpitation of the heart constitutes a prominent symptom of their illness, are very quickly quieted by it, so that the cause of the sleeplessness—in this instance palpitation—generally ceases completely in about twenty minutes. Moreover, reports on adalin, published so far, especially the first publication emanating from the medical clinic of the Charité Hospital of Berlin, show that the preparation may also be given to sufferers from heart disease without fear of exercising any injurious influence on their condition; on the contrary, such patients are very quickly calmed. It appears, further, that the sleep-producing effect of adalin commences about half an hour after its administration, and that, if the patient gets into bed soon after experiencing the first symptoms of fatigue, he falls asleep very quickly—generally in a few minutes.

Another advantage which adalin possesses is that, in comparison with the usual pure hypnotics, it oxidizes rapidly, so that, especially in nervous persons, the natural desire for sleep sets in after the first sleep produced by the adalin is exhausted, thus forming a continuous chain which embraces, according to the state of irritation of the patient, a lengthy period of sleep of from five to ten hours in duration.

To sum up, I am of opinion that we are justified in allotting to adalin a special place in our armamentarium, and the object of these lines is to recommend the regular use of this remedy in our practice.

The meeting of the New Brunswick Dental Association was held at St. John on Monday and Tuesday, July 10th and 11th. There was a good attendance when President Hart, of Sackville, N.B., called the meeting to order. Among the new plans laid for the coming year was the main question of a campaign in the schools of the Province for the examination of the mouths of the children and for a series of lectures to the pupils, teachers and parents. Approved literature and charts were donated to the Association for this purpose by Claudius Ash, Sons & Co., Limited.

A committee was appointed by the President, consisting of St. John dentists, to secure the services of an eminent orthodontist to come to St. John for two weeks to conduct a practitioners' course in the near future on this important subject.

A very enjoyable outing on the St. John River was arranged in honor of the visitors, and the St. John dentists proved most excellent hosts.

Dr. F. C. Bonnell was elected President of the Society for the ensuing year.

The meeting of the Nova Scotia Dental Society was held at New Glasgow on the 13th and 14th of July, and was a most successful convention. The local dentists provided an excellent afternoon's outing on the river, and the evening was enlivened by a band concert and garden party. Dr. Wright and Dr. Neiley left nothing undone to make the meeting both profitable and enjoyable. The probability of a joint meeting next year with the New Brunswick and Prince Edward Island Associations are very good. Should this proposal carry, the meeting would be one of great interest and should attract dentists from Quebec and Ontario.

The growth of the Dental Department at Dalhousie College is a source of great satisfaction to the dentists of Nova Scotia.

Among the many good things seen at the recent Cleveland Convention was the Tatham Gold Mesh used in Gold Inlay work. A circular description of this new material and method will be mailed you on request by ASH & SONS, Toronto, who carry this Gold Mesh in stock.

Effect of Warm and Humid Atmosphere on Schombeck's Cement

During the recent warm weather considerable difficulty has been experienced by the exceedingly rapid setting of this cement. When these weather conditions prevail the mixing slab should be thoroughly chilled either by cold water or ethyl chloride and the mix proceeded with just as soon as no moisture can be seen coming from the cold slab. Very rapid spatulation and a thin mix are required, when the usual beautiful result will follow. W.

DENTAL PRACTICE FOR SALE—In Saskatchewan, city of 10,000, business averaging \$250.00 per month. Equipment includes running water, electricity, Dunn light, gas outfit, latest cabinet, elgin casting machine and mechanical outfit. Ill health. \$1500. Terms \$1000 cash, balance 6 and 12 months without interest. Apply Claudius Ash, Sons & Co., Limited, Toronto, Ont.

Our Model Operating Room

Will give you some fine ideas in office equipment and decoration. If you are in Toronto it will pay you to call and inspect the best Model Room in Canada.

Second-Hand Goods

1 Columbia Chair, Maroon Plush, in excellent working order. This Chair is still in Maritime Provinces...	\$70 00
1 Ritter Cable Engine, 110 Volts, Direct Current, Fair Condition.....	35 00
1 Davis Gasometer, less Face Piece and Tubing, Excellent Condition.....	18 00
1 Pelton No. 1 Furnace with Pyrometer, A 1 Condition	65 00
1 Cabinet, No. 57, American Cabinet Co's, in A 1 Condition.....	65 00

WE INVITE SPECIAL DEPOSIT ACCOUNTS.

A cash deposit of \$100.00 to apply to general merchandise, entitles the sender to a discount of \$11.11.

A cash deposit of \$50.00 entitles the sender to a discount of \$2.50.

A cash deposit of \$25.00 entitles the sender to a discount of \$1.25.

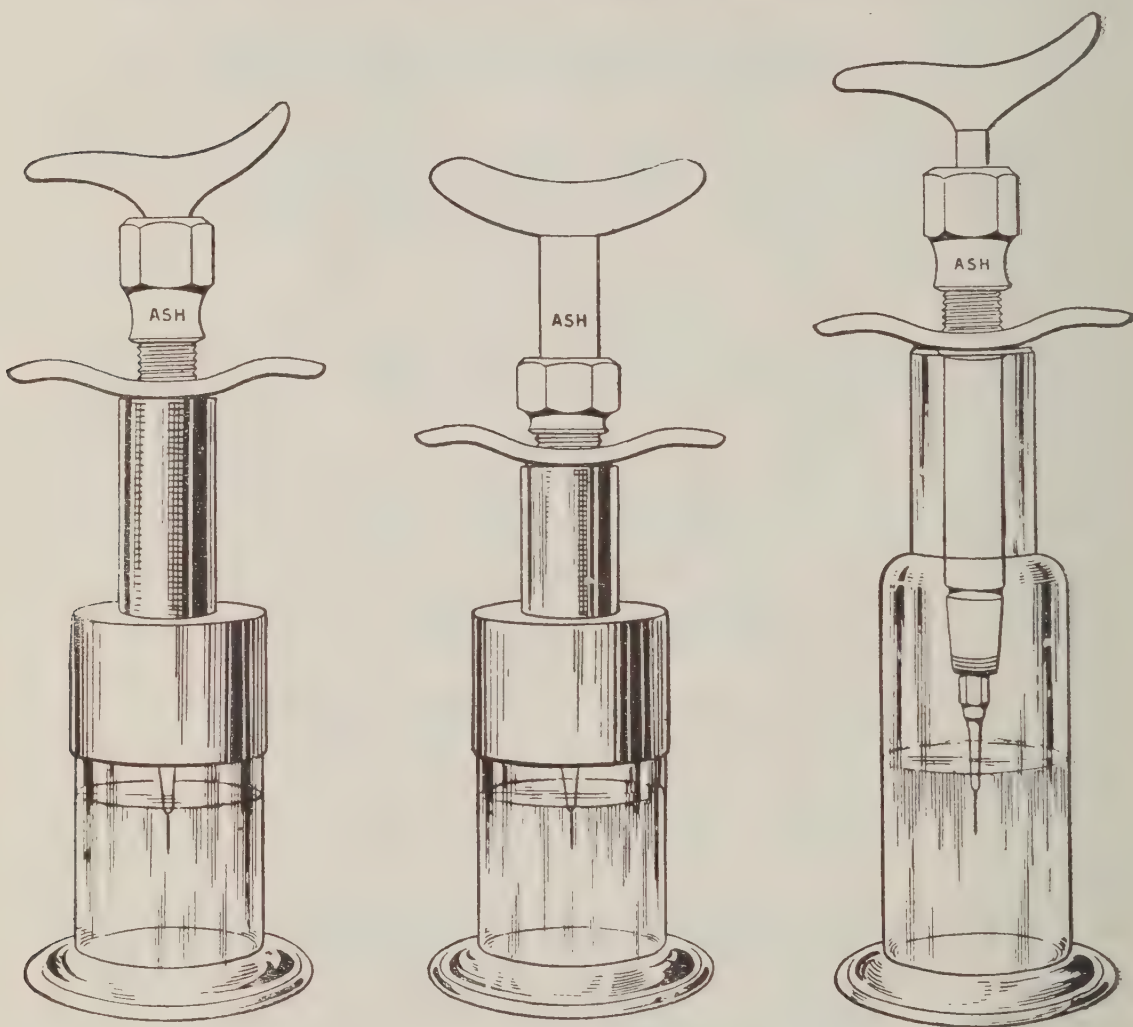
Why not send us a deposit NOW.

We have a number of excellent Practices for sale.—Also situations for graduate assistants and laboratory men.

Save your Hypodermic Needles

Nothing aggravates the Dentist much more than to take up his Syringe after his last operation and find it *plugged*. He finds that he has laid it down after using and it has quickly rusted. His time is too valuable to waste drying the needle out. All this annoyance is saved by the

Bardet Syringe Sterilizer



Keep your needle on your Syringe in the Sterilizer immersed Lysol. Your needle will never rust, is kept in a sterile solution, is always ready to hand and looks well on your table.

In neat Cardboard Boxes for Mailing, 65c. Each.



ASH'S INLAY AND CROWN CEMENT GREATLY IMPROVED

(Oxyphosphate of Zinc)

Features — Extra Tenacious ; Extremely Dense ; Very Durable ; Non-Expanding ; Highly Resistant to the Fluids of the Mouth.

One of the wants experienced by the Inlay and Crown worker is a reliable and enduring cement, which can be depended upon to retain Inlays and Crowns in position for an indefinite time.

Ash's Inlay and Crown Cement meets the need, and possesses all the features enumerated above. The powder is very finely ground, it is easily mixed with the liquid, and forms a cement which practically does not expand during crystallization. It is thus free from an objection which is present in most oxyphosphate cements that are used for setting Inlays and Crowns, viz, expanding during crystallization, with the result that the bite is raised in the case of a Crown and the fit is disturbed in the case of an Inlay.

Directions for Use.

Put a small quantity of the Liquid on a clean glass slab, place enough Powder near it, but not in it, mix the two together by drawing a little Powder at a time into the Liquid with a spatula, until it is of the consistency of milk. In this condition it is suitable for setting an Inlay. (The Inlay should be smeared with a camel-hair pencil dipped in the Cement and then the cavity should also be smeared so as to obtain the junction of cement with cement). For setting Crowns, the Cement should be mixed to the consistency of putty.

Supplied in the following shades :—

White, Pale Yellow, Yellow, Pearl Grey.

One-shade packet, any shade...per packet \$1.25 6 pks. for \$ 6.00
Four-shade packet.....per packet 3.00 6 pks. for 15.00

If you want to Insure Success

In the Casting of Gold Inlays and Gold and
Aluminum Dentures use

SOLBRIG'S EMBEDDING MATERIAL

The great amount of research work done by M. O. SOLBRIG, L.D.S. of Paris, has among other valuable results, given us the ideal in Investments. In the Embedding of large cases the most frequent cause of failure is through inability to properly surround the model, feeling certain that no air bubbles exist. Solbrig Embedding Material is mixed and poured like cream, giving absolute certainty of perfectly surrounding the model. The total absence of shrinking and cracking will delight you. It is a very open porous material, and allows a free escape of air from the mould.

Tin containing 7 lbs - - \$1.00

Tin containing 28 lbs - - \$3.50

Ash's Dental Rubbers

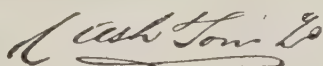
UNAPPROACHED FOR

**Excellency, Purity, Strength, Elasticity
and Density.**

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



in addition to the name of the Rubber.

Always ask for ASH'S when ordering Dental Rubbers.

For full list of our Dental Rubbers showing NEW and REDUCED prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we give full **16 OUNCES** of Rubber TO THE POUND, exclusive of the linen backing. We have also stated that MOST American manufacturers DO NOT give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?

WHILE we have always had the largest sale of DENTAL RUBBERS in Canada, the demand during the past few months has been much greater than usual, and the Canadian stock has been at times about depleted. In looking about for a reason for the largely increased sale, it is traceable to the fact that not only has the high standard of quality been kept up, but also to the fact that some Dentists who were formerly using other makes of Rubbers, find, that box for box, ASH'S have more rubber in them, and less linen. The saving that goes direct into the Dentist's pocket by using ASH'S RUBBERS is considerable, and besides there is great satisfaction in using the

BEST IN THE WORLD

THE question has often been asked us, "Why are ASH'S RUBBERS more different to pack than some other makes?"

We like to hear that question when the answer will be listened to.

Any honest manufacturer of Dental Rubber will tell you the **Purer the Rubber, the harder it is to pack.** The Dentist is of all professional men, the most exact and the most thorough and painstaking in his efforts to improve the quality of his handiwork, be it a Gold Filling or a Vulcanite Denture. In the case of the Gold Filling, the cheapest or the easiest manipulated gold he well knows is not always the best. In the case of the Vulcanite Denture, the great majority of the Dentists the world over, know that ASH'S RUBBERS make the strongest and best Dentures.

If you are not at present a user of ASH'S RUBBERS begin now.

They will cost you less than many of the inferior brands.

For prices and quantity rates see next page.

Ash's Dental Rubbers

From March 1st the following prices will apply on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.40	\$5.00	\$4.75
No. 1X Pink, Medium.....				
No. 1 Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....	5.00	4.50	4.25	4.00
No. 2X Pink, Medium.....				
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

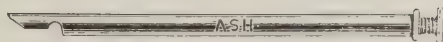
Improved Black.....	4.25	3.80
Combination		
White for Side Blocks, etc.....		
Child's "G"		
A. E. Elastic, Dark Brown	3.75	3.35
W. Elastic, Dark Brown.....		
Whalebone No. 1, Dark Brown.....		
Whalebone No. 2, Light Brown.....		
Solid Base	3.50	3.15
Dark Red.....		
Flexible Base.....		
Dark Elastic.....		
Maroon.....	2.75	2.45
Red.....		
Orange.....		
Dark Brown.....		
Brown		
English Base.....		

SPECIAL—FOR TENDER GUMS, ETC.

	Degrees Fahrenheit	Time H.	M.	lb.
Soft Pink, for lining Palates.....	310	1	15	\$6.00
Soft Dark Red.....	310	1	15	4 25
Vela for Artificial Palates	270	6	0	6.00
Brown Weighted.....				4.75
Pink Weighted.....				6 00
Brown Repairing.....				4.75
Pink Repairing.....				6.00

NOTE.—Cash Discounts do not apply on quantity rates on our Coating Rubbers in any quantity over 5 lbs.

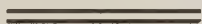
No. 303—MANDRILS



We have a large stock of these and we offer them while they last at

1.00 PER DOZEN

Send for mail order now and specify No. 7
fit or No. 2 Right Angle.



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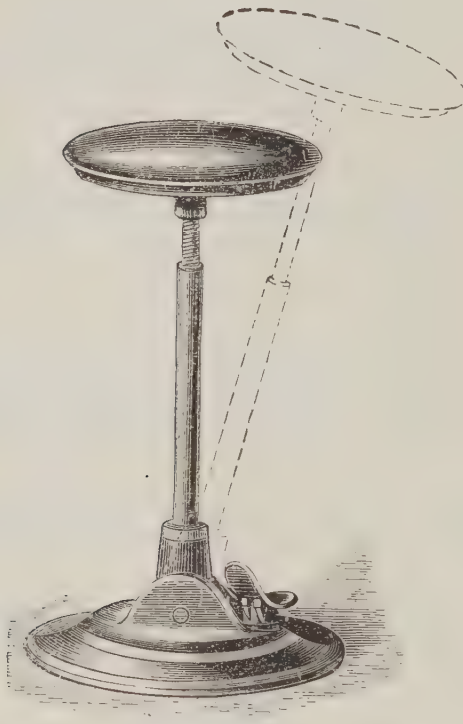
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Ash's Adjustable Operating Stool



This Stool has a range of 11 inches, the lowest position being 23, the highest 34 inches. The total weight is 17 lbs., so it can be easily lifted to any desired position. The tilting motion is controlled by a foot lever at the base which can be operated while sitting on the Stool.

Plush, Leather or Cane Top.....\$17 00

ASH'S "C" STYLE CABLE ENGINE

A—Sliding Collar by means of which the arm is released when it is set at rest, as shown by the dotted lines in the illustration.

Engine with No. 7 Hand-piece and Flexible Wrist Spring..... \$23 50

Seperately :

Top part only..... 13 50

Base and Upright..... 10 00

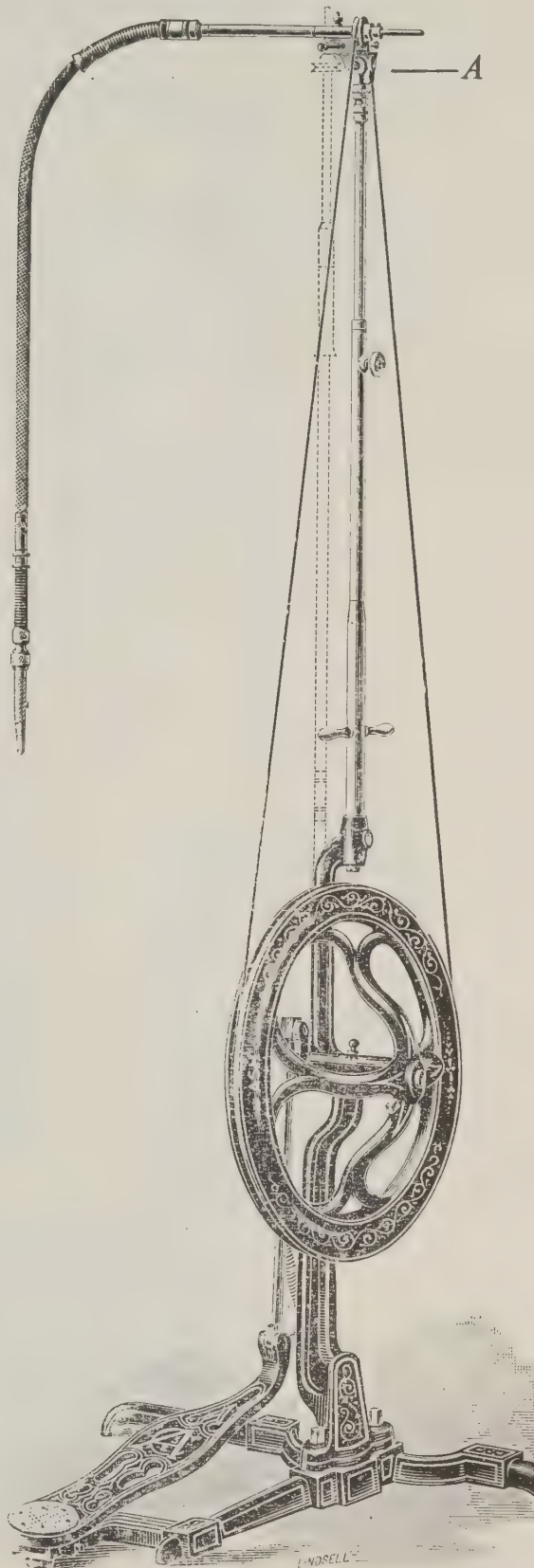
Engine with No. 7 Hand-piece, Flexible Wrist Spring, and No. 2 Slip-Joint Attachment.....\$28 50

Seperately :

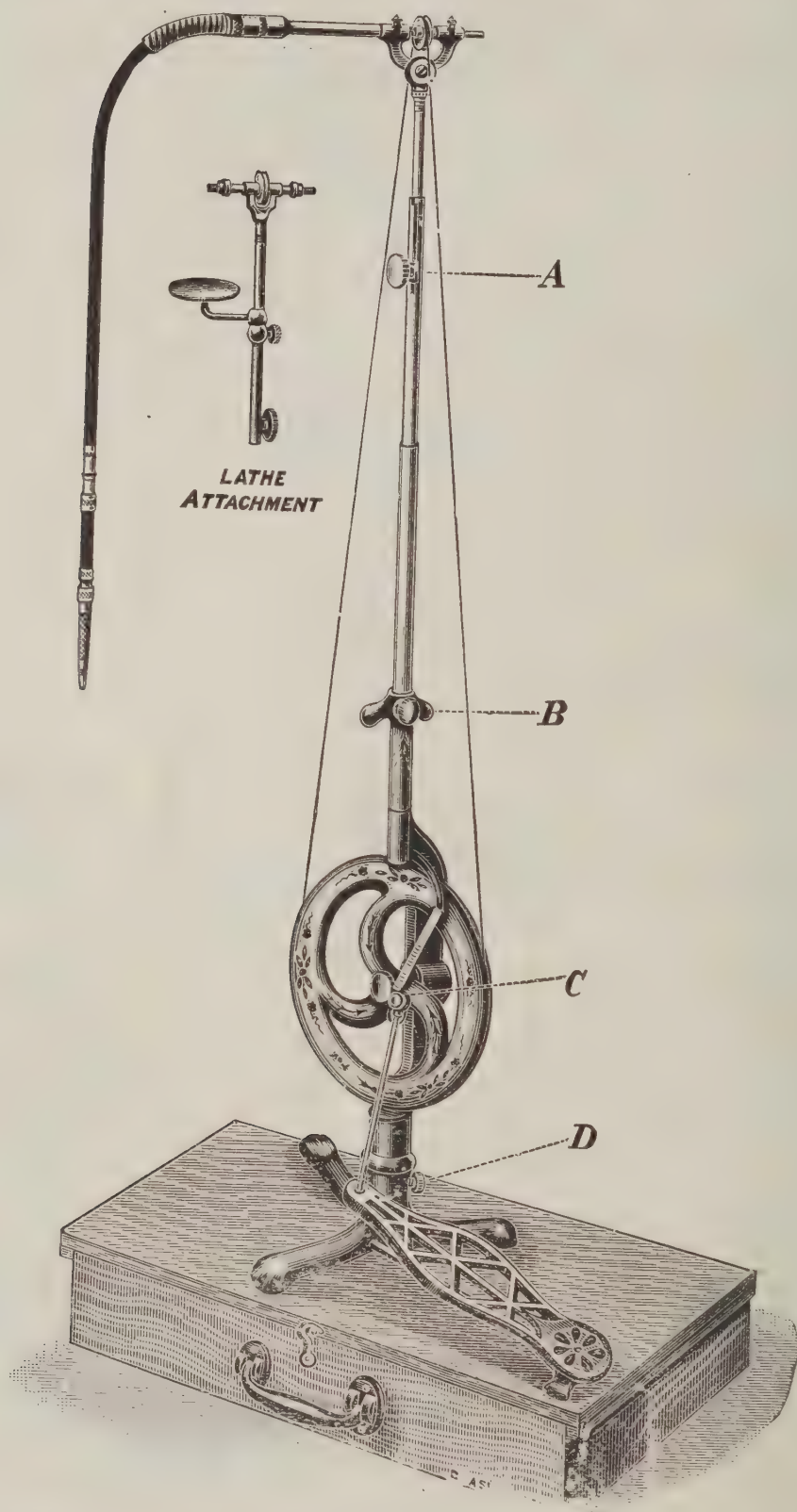
Top part only..... 18 50

Base and Upright..... 10 00

10 per cent Discount for Cash allowed from above prices to students while in actual attendance at a Dental College.



ASH'S TRAVELLING ENGINE



This is the original and most satisfactory Travelling Engine. It is taken down or set up in a few minutes without the aid of tools. Packed in finished case with handle.

ASH'S PORTABLE CHAIR, No. 3

(REGISTERED)

LIGHT SIMPLE STRONG COMFORTABLE

Weight 17 lbs.

Range of Head Rest, $5\frac{3}{4}$ inches



In Plush.....	\$17 00
In Sheraton Leather.....	26 00

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Since advertising our CONE SOCKET MIRRORS at 25 cents each in previous issues, we have sold many hundreds of them.

We want to attract your attention also to our

METAL HANDLE MIRRORS

30 CENTS EACH

We have a fine stock of these and can supply them either PLAIN or MAGNIFYING in the various sizes.

A request postal will promptly bring one to you.

Stent's Composition

Attempts have been made to imitate Stent's Compound; even the color of the Container, and the label have been copied, for the purpose of deceiving the unwary. Every cake of the **Original Genuine** Stent's Composition bears the Trade Mark, which consists of the single word

STENT'S

Without Initials of any kind and the outlines of two **Impression Trays**, also the label on every box bears this signature:

C. P. & C. Stent.

Sole owners of the original formula—

CLAUDIUS ASH, SONS & CO., Limited

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10 Lbs. for \$9.00

Ask for a Sample Cake.

Free for the Asking.

WE ARE NOW READY

With our new cement product

ASH'S EMPIRE CEMENT

This cement will be found to combine all the qualities that are demanded by the most discerning dentist. We don't intend to say much about it.

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Singe Color Box - \$1.00

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**MADE BY THE OLDEST DENTAL HOUSE IN THE
WORLD.**

**MAKE THAT
TROUBLESOME
LOWER PLATE
STAY PUT**

BY USING

Galloway's Lower Suction

\$1.00 BY MAIL

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AFTER HOURS C. 2631

Ash's First Quality Engine Burs

We carry in Toronto a large stock of these burs which are made of the best steel available. They are all British made on the most approved Bur machines known. They are attractively done up with a mica window to each package.

Note the prices. They have never been equalled by

HIGH QUALITY BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. These burs are of the highest quality, scientifically made and are as low priced as is consistent with ASH quality.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.91	\$.83
Rounds.	8 to 11	1.25	1.17	1.08
Wheels.	11 1/2 to 18	1.00	.91	.83
Wheels.	19 to 22	1.25	1.17	1.08
Inverted Cones.	33 1/2 to 40	1.00	.91	.83
Inverted Cones.	41 to 44	1.25	1.17	1.08
All Fissures.		1.00	.91	.83

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

ASH CROSS-CUT BURS.

For No. 7 Handpiece and No. 2 Right Angle. Rounds, Inverted Cones, Wheels, Fissures. The most rapid-cutting Burs obtainable.

	Sizes.	Per Doz.	1/2 Gro.	1 Gro.
Rounds.	1/2 to 7	\$1.00	\$.91	\$.83
Rounds.	8 to 11	1.25	1.17	1.08
Wheels.	11 1/2 to 18	1.00	.91	.83
Wheels.	19 to 22	1.25	1.17	1.08
Inverted Cones.	33 1/2 to 40	1.00	.91	.83
Inverted Cones.	41 to 44	1.25	1.17	1.08
All Fissures.		1.00	.91	.83

In computing quantity orders, the requisition may comprise both plain and cross-cut Burs.

HAVE YOU EVER

Examined the quality of your cast inlays, bridges, or cast Aluminum dentures when made by any other method than super-heated steam?

We would like the opportunity to demonstrate this important point to you.

The Solbrig-Platschik Press

Gives you cast gold and Aluminum of the texture of the beaten metal. No Brittleness. No pitting of Aluminum.

Write us for information; it will cheerfully be given.

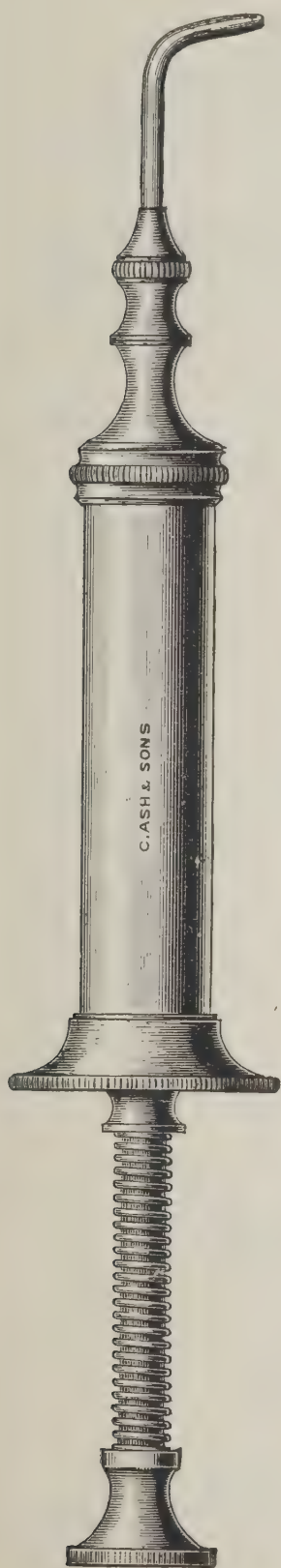
A Popular Priced Wax

IS IN GREAT DEMAND

The large sale for our ENGLISH WAXES bears testimony to their great value.

No. 3, Pink	per lb.	.65
“ 2, “	“	.80
“ 1, “	“	.90
Brown for Base	“	.85
Extra Tough Pink	“	1.00
“ “ “	“	1.25
“ “ Yellow.....	“	1.00
Black for Inlays in fine sticks, per box		.35

Send us that MAIL ORDER, or ask one of our many travellers to supply you.



Hunt Syringe

Price - - - - - \$1.85
Price, with 1 Extra Fine Point 2.35

This Syringe has always been the best Water Syringe on the market. It has never been successfully imitated.

BORITH

An excellent preparation to recommend your patients for cleansing Dentures. It is a thoroughly reliable preparation.

Price \$2.00 doz.

ZIMO

The best obtundent on the market for the painless extraction of teeth and minor surgery; Antiseptic and Germicidal. Can be used in all cases; safe and effectual. No bad after effects. Once used, always used. "ZIMO is a great practice builder," as everyone says who has used it. 4 oz. bottle, \$1.00; 6 bottles, \$5.00. Every bottle guaranteed. Try a bottle; if not all right send it back and get your money.

Manufactured and put up by

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CLAUDIUS ASH, SONS & CO. Ltd.

11-13, Grenville Street, Toronto, Ont.

CHARLES L. DALY

The X. L. C. R. Dental Laboratory

We do not claim to specialize in any one Branch of Mechanical Dentistry. We state conservatively that we turn out work in all the following branches that cannot be excelled.

Crown and Bridge Work

Gold Dentures

Cast and Swaged Aluminum

Continuous Gum Work

Cast Gold Inlays

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**Vulcanite and Metal Work with Dowel
Crowns and Tube Teeth**

Lingual Bar Lower Dentures



Write how for Price List, or better still, send us your next order.

X.L.C.R. DENTAL LABORATORY

2 College Street, Toronto

OUR PYORRHEA CLINICS

prove that "Dentinol" and "Pyorrhocide" used in conjunction with scaling, produce results in the treatment of Pyorrhea, Gingivitis, spongy and bleeding gums that are **UNEQUALLED**.

WE TREAT CASES PRESENTED BY DENTISTS ONLY and **COMPLETE CASES** without expense to Dentist or Patient. Our Clinics are open to **ALL DENTISTS** during **ALL TREATMENTS**. That old notion about "patients not wanting to pay for treatment" is knocked sky high when you show them **RESULTS**. Rich and poor alike are wonderfully appreciative.

OUR CLINICIANS USE

The Improved Dentinol Pyorrhea Scalers

(Set of 12) \$9.00.

By the use of which the removal of all desposits is simplified.
Full directions for using each instrument enclosed.

The Dentinol Perfect Syringe

Ground glass barrel and plunger (no packings) flat tipped platinum iridium point.

Dentinol

2 oz. bottle (Flooded into pocket with syringe). \$1.50

Pyorrhocide

4 oz. can (used by patient as a Dentifrice) \$12.00 per doz.

Pyorrhocide is a powerful antiseptic, medicated, prophylactic Dentifrice and is the best for **GENERAL USE** in that the use of it maintains hygienic conditions in the oral cavity, thoroughly cleans the teeth, and PREVENTS PYORRHEA.

Sold through all Dental Supply Houses.

Literature mailed free on application to,

The Dentinol and Pyorrhocide Co.
1 Union Square, New York City



Patented May 31st, 1904
December 20th, 1910

Lewis Electric Mouth Illuminator

The Lewis Illuminator is the result of extensive experimenting to produce simple, practical and effective means of lighting the mouth.

The body of the Illuminator is made in two diametres ; the one enclosing the lamp being three inches, and the smaller forming the condensing chamber being two and one-half inches in diameter. These sections are firmly riveted together and secure the diaphragm that separates the sections. This diaphragm besides excluding the direct heat from the lamp, is quite an important member, as to it is attached on one side the condensing lens by a suitable bezel, and to the other side the bracket on which is secured the shutter.

The shutter to which is attached the little handle projecting below is adjustable to produce four diameters of light as desired.

The focus is fixed, and an absolutely clear and efficient light is obtained without further adjustment. The most satisfactory distance is 18 to 24 inches from the mouth.

The Illuminator is suspended from the Bracket by means of a ball and socket joint which enables it to be adjusted at any angle by a touch.

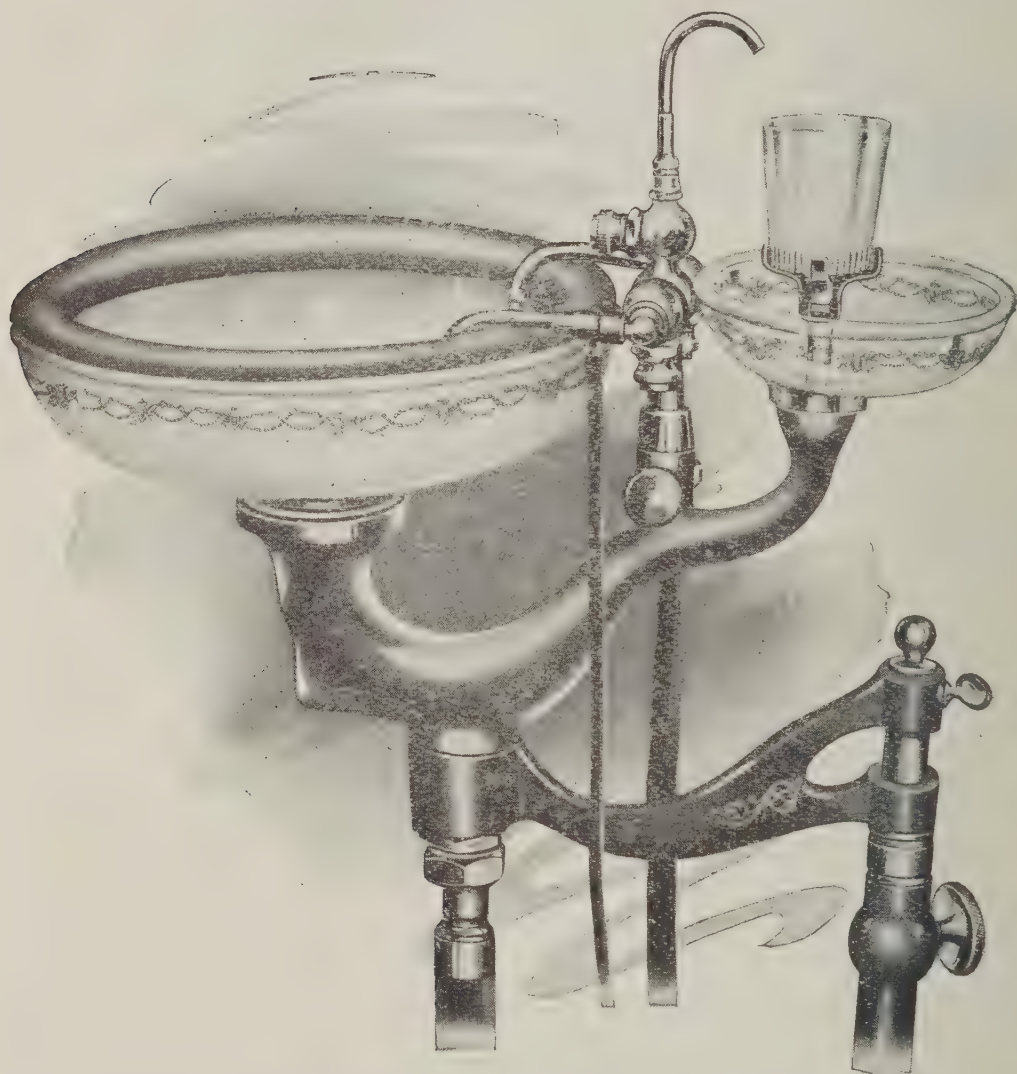
The lamp employed is the "Femco" made by the Franklin Electric Mfg. Co., obtainable most anywhere. No. expensive renewals required. **WATCH THE CIRCULAR ?**

PRICE LEWIS ILLUMINATOR, \$12.00
BRACKET, \$3.70 ADDITIONAL

Buffalo Dental Manufacturing Co.
BUFFALO, N.Y., U.S.A.

CLARK FOUNTAIN SPITTOONS

FROM \$39.00 TO \$74.75



ASK THE MAN WHO USES ONE
YOUR DEALER HAS THEM

A. C. CLARK & CO.
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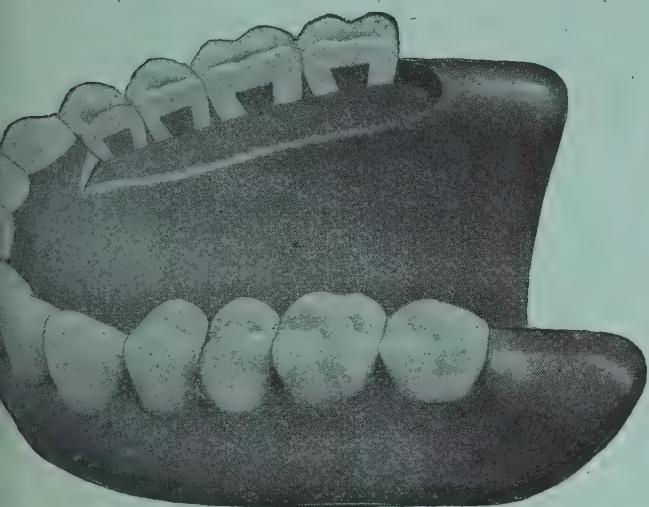
Far Economy, Strength and Practicability
USE

CONSOLIDATED DIATORIC TEETH

In Combination Sets

A Combination Set { 8 Diatoric Teeth } costs \$1.46
 { 6 Platinum Pin }

That's the proof of their Economy



Sectional view of pinless bicuspid and molars with palatal surfaces ground off, showing how securely the wedge-like shaft of vulcanite attaches them to the plate.

The illustration shows how firmly the pinless bicuspid and molars are imbedded in the plate. The well known mechanical advantages of the Consolidated Diatoric, its simplicity and the ease with which the vulcanite imbeds itself, its cleanliness and aseptic advantages and its *strength* are augmented by

THAT LIVE TOOTH APPEARANCE

of the Famous Consolidated Porcelain of which it is made.

Consolidated Combination Teeth are made in a large variety of molds—illustrations and further description will be found on pages 50—55 of Consolidated Dental Mfg. Co.'s Tooth Catalog.

Consolidated Combination Sets are sold by all leading dental dealers

CONSOLIDATED  DENTAL MFG. CO.

NEW YORK
BOSTON

CHICAGO
DETROIT

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Ash's Dowel Crowns

WE have just opened up a nice shipment of Crowns and Crown Cases. We can send you a nice selection of shades and moulds that cannot fail to please you.

Case with 200 Crowns - \$20.00

We have a fine selection of these Crowns in Molars and Bicuspids also.

Send us that Mail Order NOW

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AFTER HOURS C. 2631

ASH'S Canadian Monthly Circular

Issued from Toronto on the First of each Month

VOL. I.

SEPTEMBER, 1911

No. 12

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Conforming to the rule of the Board of Directors of the Royal College of Dental Surgeons, that the Dental Houses do not have a representation in the College building, we will not have a traveller at the College when you reassemble there in October.

We invite you to our Show Rooms at

11-13 GRENVILLE STREET, TORONTO

(100 feet from corner College and Yonge Sts.)

where you will have the choice of all lines of standard manufacture, both English and American.

In Dental Goods more than any other line quality counts, and the protection you have when buying goods that bear the name of ASH & SONS (the oldest house in the world) is so great that you should refuse goods of nondescript and nameless manufacture.

Ask for our Student price list.

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Ash's Canadian Monthly Circular

VOL. I.

TORONTO, SEPTEMBER 1, 1911

No. 12

THE TIE MEMBER AND REINFORCED WAX PATTERN IN PROCESS OF CASTING

The process of casting is now thoroughly established and widely adopted because of its immense advantages over former methods. It has, however, involved certain fundamental difficulties which has limited its field of usefulness. The first of these is the difficulty of drawing wax patterns with definite bands upon roots or definite margins and upon inlays, without distortion of the pattern and consequent imperfection of the casting. A second obstacle has been the uncertainty of procuring outside measurements because of the shrinkage of the metal in cooling—the casting often not going to place without considerable grinding which spoils the fine adaptation.

These difficulties which have confronted all operators have been most effectively overcome by a recent discovery. By the use of a fine gold mesh the operator is enabled to place a definite band or margin upon the tooth. The mesh is so pliable that it can readily be formed to the margin of the tooth. Furthermore, it reinforces the wax and avoids distortion of even the finest and most delicate patterns. When the wax is melted out of the mould preparatory to casting, the mesh is not melted but fuses perfectly with the entering molten gold, making a homogenous mass which retains the original contour or definite margins and insures both inside and outside measurements.

Under the existing methods of making cast inlays chiefly used in the large bicuspid and molars, it is necessary, practically speaking, to make the casting of the wedge-shaped type so that the pattern can be easily formed and drawn, and, so that the shrinkage be taken up by the wedge-shaped formation. But, many cases of adaptation require compound parts, or shoulder formations which militate against and sometimes wholly frustrate the purpose of the purely wedge-shaped type of inlay. By the use of gold mesh in

the pattern it is not essential to adhere to the wedge type of filling.

In all fillings and most root measurements where close adaptation is required, the majority of fittings and overlapping bands are very difficult to produce and very uncertain, and, even when obtained and cast, fail of exactness because of a slight amount of shrinkage. By the aid of waxed mesh, these bands and margins are easily formed, and when cast, produce a perfect fit.

The uniting of an artificial tooth to a root pattern is admittedly difficult and uncertain. Hence, perhaps the most important feature in this new reinforcement process is the introduction of the "tie member." This is simply and easily accomplished by making a waxed mesh pattern on the root, another on the base of the artificial tooth and joining the two patterns by slightly warming the wax. This constitutes the tie member. Heretofore it has been impossible to join two wax patterns without distortion; but, the reinforcement of the wax by the mesh renders this not only possible but easy, since the wax when slightly warmed can be attached to its component member at any desired angle.

The extreme difficulty of producing by the use of wax alone, definite margins, especially of cervical borders of approximal spaces of bicuspid and molars, is now fully overcome. The wax is placed on both sides of the mesh, the margins of wax remain as definite margins, reinforced by the gold mesh, when burnished with a slightly warm instrument along the borders.

The mesh is not used for an exact adaptation, but merely for reinforcing the wax near the surface of the pattern. The wax is placed on both sides of the mesh and forms the exact adaptation. One of the most attractive features in connection with the use of this mesh for pattern work is that the correction or completion of an adaptation surface may be effected by re-melting the adaptation surface with a warm spatula, or by adding a slight amount of hot wax. One can readily understand that a great pressure can be brought to bear upon the waxed pattern when reinforced by mesh, thereby forming an exact adaptation or die fit—the desideratum.

Gold mesh is most admirably adapted to bridge work. Much of the work in this branch of dentistry must be performed out of the mouth on articulators. The essential requisites are that the missing teeth be assembled, articulated, and changed to suit the bite. Gold mesh is used in the usual manner on any type of dummy teeth now in use. For example: the facing teeth with pins are placed upon one piece of waxed mesh; the pinless porcelain teeth are formed on separate pieces of mesh and then placed in their relative positions upon a strip of waxed mesh. The saddleback or a form for the bicuspid and molars similar to Steel's facing teeth are preferred because of their simplicity of adjustment upon

one piece of mesh, as in the facing type. This embedded cloth of gold upon which the teeth are placed, forms the basis for adjustment, and when slightly warmed lends itself to further adjustment for the bite upon the articulator without changing their proper relation. Should there be any disarrangement it can be readily remedied after the articulation has been obtained. It is understood, in the case of facing teeth, that suitable carbon points will be inserted in the holes of the pattern. In all cases porcelain is removed from pattern before casting.

The mesh supplies to the wax the stable element which assures to the pattern a high degree of rigidity; the presence of the wax, when slightly warm, allows the operator to change the articulation quickly, easily and with precision. The wax is not affected by the temperature of the mouth in forming and finishing the pattern on account of this reinforcement.

To summarize: Gold mesh facilitates a wide range of dental operations and opens the way for many others which were not before practicable by the casting process because of the inability to handle delicate wax patterns without distortion; it produces definite bands and margins, which retain their original shape when cast; it is also extremely useful in connection with crowns and bridges, always insuring a perfect and rapid adjustment. A marked feature of the entire process is its simplicity of technique.

Articles with detailed illustrations showing the practical applications of this reinforcing principle and its potentiality, will appear in subsequent issues.

A. W. TATHAM, D.D.S.

Our Model Operating Room

Will give you some fine ideas in office equipment and decoration. If you are in Toronto it will pay you to call and inspect the best Model Room in Canada.

Second-Hand Goods

1 Harvard Oil Chair, good condition.....	\$75 00
1 Columbia Chair, Maroon Plush, in excellent working order. This Chair is still in Maritime Provinces....	\$70 00
1 Ritter Cable Engine, 110 Volts, Direct Current, Fair Condition.....	35 00
1 Davis Gasometer, less Face Piece and Tubing, Excellent Condition.....	18 00
1 Pelton No. 1 Furnace with Pyrometer, A 1 Condition	65 00
1 Cabinet, No. 57, American Cabinet Co's, in A 1 Condition.....	65 00
1 New Leather Covered Columbia Chair (absolutely new)	125 00
1 Wilkinson Pattern Chair, Plush, A 1 condition.....	75 00

WE INVITE SPECIAL DEPOSIT ACCOUNTS.

A cash deposit of \$100.00 to apply to general merchandise, entitles the sender to a discount of \$11.11.

A cash deposit of \$50.00 entitles the sender to a discount of \$2.50.

A cash deposit of \$25.00 entitles the sender to a discount of \$1.25.

Why not send us a deposit NOW.

We have a number of excellent Practices for sale.—Also situations for graduate assistants and laboratory men.

DENTAL PRACTICE FOR SALE—In Saskatchewan, city of 10,000, business averaging \$250.00 per month. Equipment includes running water, electricity, Dunn light, gas outfit, latest cabinet, elgin casting machine and mechanical outfit. Ill health. \$1500. Term \$1000 cash, balance 6 and 12 months without interest. Apply Claudius Ash, Sons & Co., Limited, Toronto, Ont.



You Need A New Agate Spatula

The Agate Spatula is the most important aid to successful manipulation of all Silicate Cements.

Ash's Agate Instruments have always been the best in the market.

Double End Agate Plastic Instrument	-	-	\$1.00
Single End Agate Spatula	-		.70
Double End Agate Spatula with double Head Burnisher	-		\$1.50

Claudius Ash, Sons & Co., Ltd.

If you Want to Insure Success

In the Casting of Gold Inlays and Gold and
Aluminium Dentures use

SOLBRIG'S EMBEDDING MATERIAL

The great amount of research work done by M. O. SOLBRIG, L.D.S. of Paris, has among other valuable results, given us the ideal in Investments. In the Embedding of large cases the most frequent cause of failure is through inability to properly surround the model, feeling certain that no air bubbles exist. Solbrig Embedding Material is mixed and poured like cream, giving absolute certainty of perfectly surrounding the model. The total absence of shrinking and cracking will delight you. It is a very open porous material, and allows a free escape of air from the mould.

Tin containing 7 lbs - - \$1.00

Tin containing 28 lbs - - \$3.50

Can you afford to be without the only investment that does not shrink under heat?

What You Have So Often Asked For.

**A POPULAR TEMPORARY STOPPING
30 Cents a Box.**

It's a good guttapercha, scientifically prepared, and
it will please you as it has satisfied
many others.

**WE MAKE A QUANTITY RATE OF
6 BOXES FOR \$1.50**

SEND US AN ORDER NOW

Ash's Popular Stopping

GALLOWAY'S

SUCTION DEVICE

FOR LOWER DENTURES ONLY

Patented in United Kingdom and U.S.

Other Patents Pending

This Suction is the most satisfactory ever offered. It consists of a curved metal bar, which has counter sunk holes in it for four pins to secure it to a plaster model, and a vulcanized strip of Ash's specially prepared Vela Rubber which so well withstands the oral fluids.

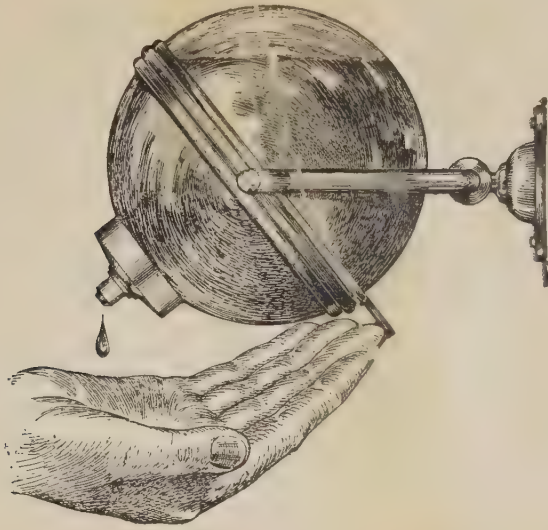
This Rubber Strip is held in position in the denture by the suction which is produced by the small holes on the curved surface and to the gum by the suction through the larger holes on the flat surface. The Strip can be removed and cleansed, and replaced in half a minute.

The device is cleanly and secures the denture properly without any discomfort to the patient.

Price \$1.00

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Claudius Ash, Sons and Co., Limited



THE ONLY ASEPTIC WAY OF USING SOAP

If by means of the BEAU BRUMMEL LIQUID SOAP DISPENSER, the only mechanically-perfect, successful device which furnishes a measured quantity of absolutely uncontaminated soap from a practically air-tight dispenser, each time it is used.

Embellishes the washstands, eliminates soap waste and mussy soap dishes. Requires no care and attention.

As for the soap itself, we have perfected practically a neutral soap, which being prepared from pure vegetable oils, is the purest form of soap that can be had, free from acids, animal fats and tallow, and it is not only a better detergent and cleanser than cake soap, but is an emolient to the skin, refreshing, stimulating and invigorating.

The Beau Brummel Liquid Soap System is the only one whereby the Dentist can assure absolute asepsis in using soap, in his offices.

PRICES :	Holders	-	-	-	-	\$3 25
	Soap, per Quart	-	-	-	-	1 75
	Soap, per Gallon	-	-	-	-	4 25

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A Splendid Metal for Dental Plates—As Easily Swaged or Struck-up as 20-ct. or 18-ct. Gold.

Some five years have elapsed since Palladium Alloy was unavoidably withdrawn from the market owing to the scarcity of pure palladium. This scarcity made the cost prohibitive, and rendered it impossible to continue the manufacture of the alloy at a marketable price.

A fresh source of supply has recently been opened up, which we believe will be permanent, and we are, therefore, induced to bring Palladium Alloy once more to the notice of the profession, remembering as we do, the great popularity which it enjoyed when it was previously introduced.

Palladium Alloy is a TRUE ALLOY. By this we mean that the palladium and silver of which it is composed are absolutely compounded together, hence there is no need to protect the silver by treating the alloy so as to produce a palladium surface. The ductility and malleability of Palladium Alloy are well known; they are such that a plate can be stuck-up with the ease which attends the striking-up up 20-ct. or 18-ct. gold.

In regard to the price of Palladium Alloy: In comparing it with the price of Dental Alloy, it must be borne in mind that bulk for bulk it is lighter than Dental Alloy, so much so that one ounce of it will go about as far as one ounce and a quarter of Dental Alloy.

PRICES

(Which are likely to be permanent.)

Plate or Wire per dwt. 112½

HAVE YOU EVER

Examined the quality of your cast inlays, bridges, or cast Aluminum dentures when made by any other method than super-heated steam?

We would like the opportunity to demonstrate this important point to you.

The Solbrig-Platschik Press

Gives you cast gold and Aluminum of the texture of the beaten metal. No Brittleness. No pitting of Aluminum.

Write us for information; it will cheerfully be given.

WE ARE NOW READY

With our new cement product

ASH'S EMPIRE CEMENT

This cement will be found to combine all the qualities that are demanded by the most discerning dentist. We don't intend to say much about it.

It will do its own Advertising.

Send your Mail Order now

Singe Color Box - \$1.00

4 Color Box - - - 2.50

**MADE BY THE OLDEST DENTAL HOUSE IN THE
WORLD.**

ASH'S MINERAL FACINGS

FOR DENTAL REPAIRS

Made in the principal patterns and sizes of our Flat Pin Teeth.

The three sizes of our Mineral Facings, here illustrated, are sufficient to show the distinctive feature to which we wish to draw attention, viz., the oval cavity in the back of each.

They can be used for repairing nearly every kind of denture; they are easily applied, exceedingly durable, and can be quickly fitted—it does not take longer than from ten to fifteen minutes to fit one.

They are invaluable for repairs to Bridges, and in all cases of Plate and Crown Work in which a flat tooth has to be replaced.

The oval cavity at the back of each facing corresponds with the positions of the pins in our Flat Pin Teeth. The facings do not require backing, but can be applied to the backings of fractured or broken teeth

when the broken portions of mineral have been removed from the backings.



83



71



14

DIRECTIONS FOR USE.

Chip away the remains of the broken tooth from around the pins in the backing, and roughen the backing with a suitable instrument or tool.

Make a thin mix of Ash's Inlay and Crown Cement, or other suitable Oxyphosphate cement, paint both the tooth backing and the new facing with a thin layer of it, press the facing firmly on the backing and keep it under pressure until the cement has thoroughly set.

Important Note.

On no account must any of the Silicate Translucent Cements be used for attaching our Mineral Facings to teeth backings, etc., because they are not sufficiently adhesive for the purpose.

Ash's Mineral Facings.....each \$.18

Ash's Mineral Facings.....per 100 15.50

CANADIAN PRICES

Ash's Mineral Teeth

Consequent to the further advance in the cost of Platinum, the following Prices on Teeth of our manufacture will take effect from January 2nd, 1911.

	Single	100 Teeth	500 Teeth	1000 Teeth
Flat Teeth.....	.25	.20	.19	.18½
Plain Vulcanite.....	.20	17½	.17	.16½
Diatric Teeth.....	.04		3¾	.3½
Combination Sets of 14....	1.52			
Combination Sets of 28....	3.04			
Tube Teeth without Platinum Lining	.12			
Detached Post Crowns....	.12	.10	9½	.9
Dental Alloy Pins, Single..	.25			
Dental Alloy Pins Double..	.35			
Base Metal Roughened Pin.	.05			
Vulcan Tag Posts, doz. ..	.90			
Aluminium Alloy Posts, doz.	.30			

Above prices subject to **5** per cent. for Cash if purchase amounts to \$25.00 or over.

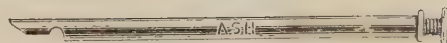
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LONDON, ENGLAND

Canadian Branch—11-13 Greenville Street, TORONTO, ONT.

No. 303—MANDRILS



We have a large stock of these and we offer them while they last at

1.00 PER DOZEN

Send for mail order now and specify No. 7
fit or No. 2 Right Angle.



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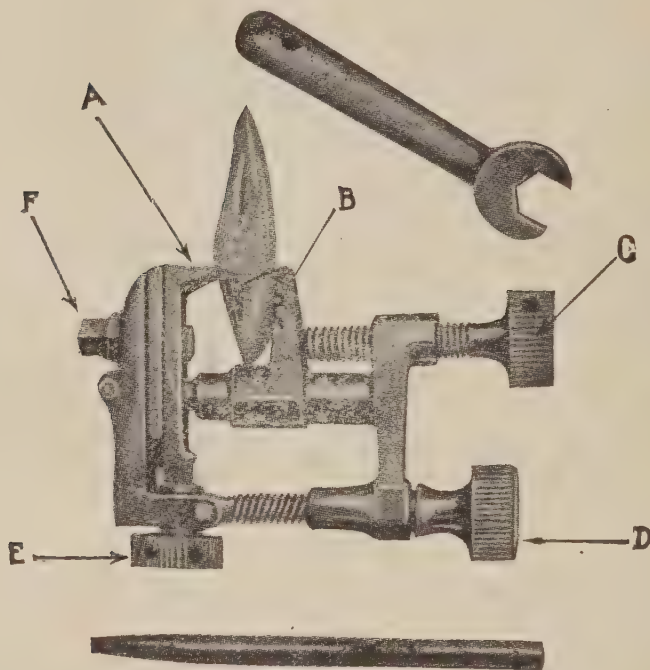
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AFTER HOURS C. 2631

Mosley Crown Remover

An Ideal Appliance for Removing
Crowns from Roots.

Registered.



Natural Size.

The Mosley Crown Remover is the only instrument yet devised for removing Dowel Crowns from the mouth. Its primary object is to remove these crowns without in any way injuring the root. This is accomplished quickly and painlessly. In most cases the crown remains uninjured and can be used again if desirable.

A slight turn to the right of Thumb Screw E removes the Crown, one Wedge Tongue pulling the Crown downwards, the remaining two supporting the root

- | | |
|--------------------|----------------|
| A. Wedge Tongues 3 | D. Thumb Screw |
| B. Vice Jaw | E. Thumb Screw |
| C. Thumb Screw | F. Jam Nut |

Complete directions with each Remover.

PRICE - - \$5.50

Ash's Dowel Crowns

The following pages, which show some moulds of ASH'S DETACHED POST CROWNS are well worth close examination and study. The illustrations will be valuable as a reference and guide in ordering by mail. Keep these illustrations in a convenient place, as, of course, you will become a user of them when you are conversant with their superiority over any of the existing dowel crowns.

The price, too, is a great consideration—make a note of it—

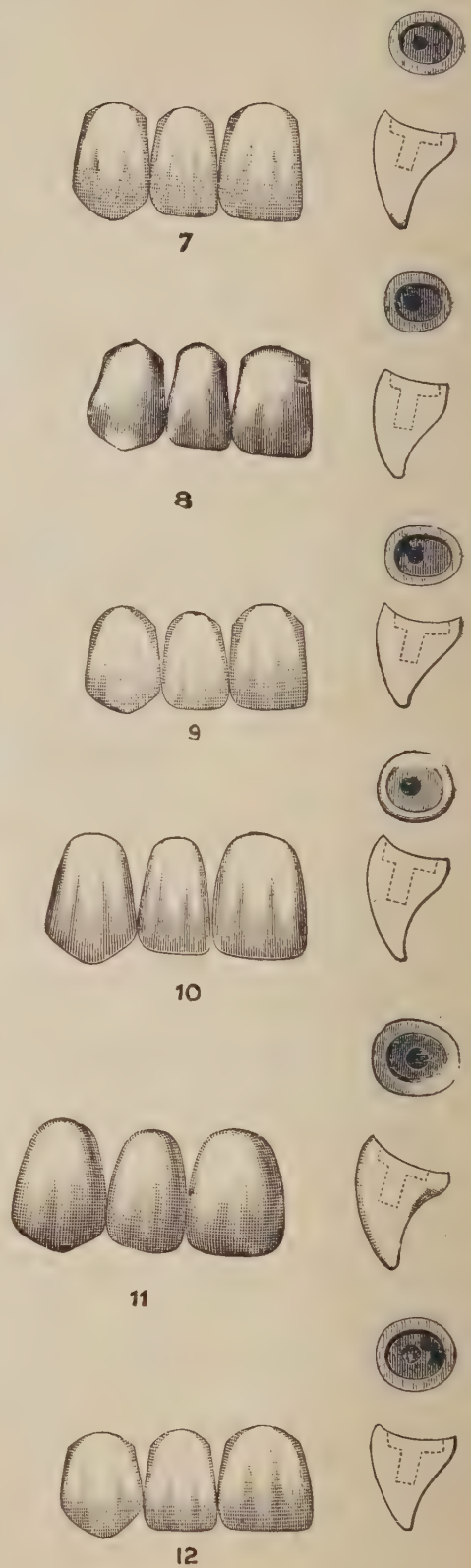
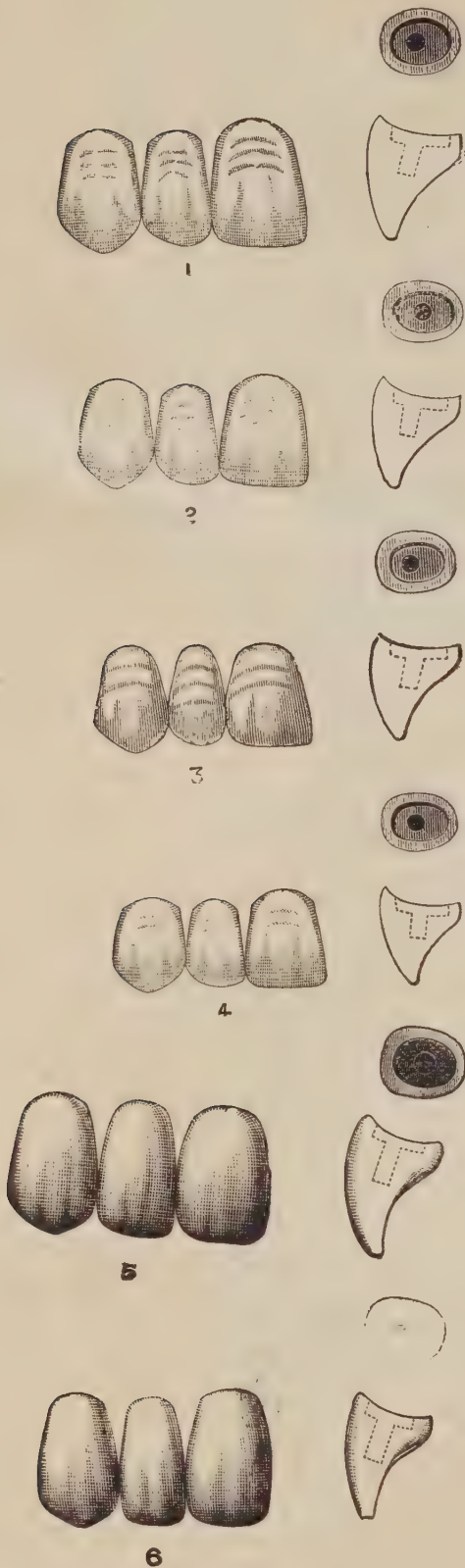
12 cents each.

\$10.00 per hundred

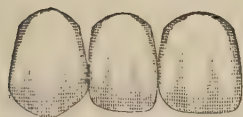
Outside of the recognized value they have, as being made of our celebrated mineral, positively the only body that can be successfully polished after grinding, the moulds are the most serviceable. Notice in the Anterior and Bicuspid teeth, the provision for roots that are large bucco-lingually.

Note also the recess in the crown that takes the post. It is etched in each and every crown, assuring you of perfect cementation. We are also making now the labial aspect of our crowns much longer than shown in the illustrations. This improvement is obvious.

ASH'S DOWEL CROWN'S—UPPERS



ASH'S DOWEL CROWNS—UPPERS



13



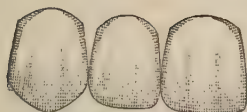
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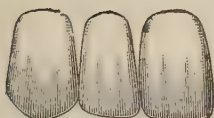
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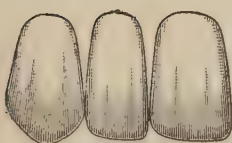
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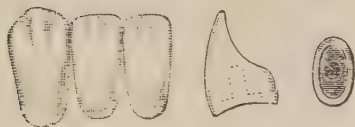
ASH'S DOWEL CROWNS—LOWERS



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51



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MOLARS



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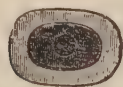
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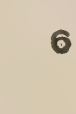
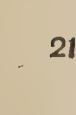
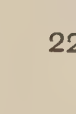
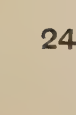
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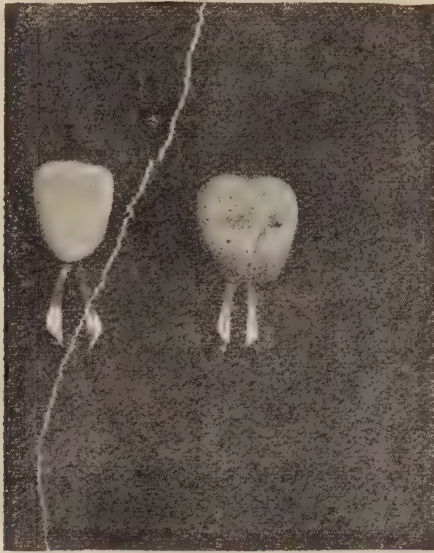


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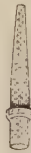


ASH'S DOWEL CROWNS—BICUPSIDS

  1	  2	  3
  4	  5	  6
  7	  8	  9
  10		
  11	  12	  13
  14	  15	



C. Vulcan Tag-Posts in Crowns—90c. doz.



D. Ash's White Metal Crown Posts—5c. each.

Fig. 6,

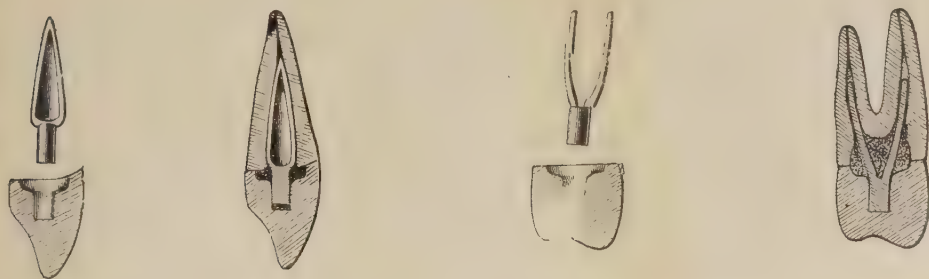


A. Ash's Aluminium Alloy Post roughened—30c. doz.



B Vulcan Tag-Post - 90c. doz.

ASH'S DOWEL CROWNS



The principal advantages of a detachable crown, as contrasted with a crown having a pin fixed in the mineral, lie in the facilities afforded for grinding the base of the crown to fit the root and for bending the dowel to the angle required to obtain a correct bite.

In Ash's Dowel Crowns the measurements and shapes of the bases are such as to fit the greatest number of average roots.

The dowels are made of the best quality Dental Alloy, and are much more rigid than Platinum; they are strongest at the part which has to bear the greatest strain, viz., where the crown joins the root. Those intended for bifurcated roots of Bicuspids are extremely strong; at the same time the pin ends are sufficiently pliable and thin to allow them to follow the bends of root-canals. We need hardly emphasize the serious objection that exists to the insertion of a base metal pin in a natural root.

Made in sets of six—Centrals, Laterals, and Canines in thirty sizes and patterns, Bicuspids in fifteen sizes, and Molars in fourteen sizes; other sizes in preparation.

Each	12c.	
100 Crowns	10c.	each
500 Crowns	9½c.	"
1000 Crowns	9c.	"
Single Pins, in two sizes, in Dental Alloy	30c.	"
Bifurcated Pins, in Dental Alloy	40c.	"

Base Metal Pins, of new and improved form, made of stiff white metal, roughened all over, each. 5c.

Ash's Dental Rubbers

UNAPPROACHED FOR

**Excellency, Purity, Strength, Elasticity
and Density.**

To mark the genuineness of our Rubbers, the face of every box and envelope which we supply bears this signature and monogram—



and one of the pieces of cloth in which each sheet of rubber is packed bears this signature—



in addition to the name of the Rubber.

Always ask for ASH'S when ordering Dental Rubbers.

For full list of our Dental Rubbers showing NEW and REDUCED prices, see next page.

IMPORTANT.

We have drawn the attention of the profession for months past to the fact that we give full **16 OUNCES** of Rubber TO THE POUND, exclusive of the linen backing. We have also stated that MOST American manufacturers DO NOT give 16 ounces to the pound. We now state that consequent to the agitation in America, demanding full weight and measure, these manufacturers to protect themselves from the law are omitting to mark the weight of rubber on their containers. Is our claim proven?

IN putting into force on March 1st a new and reduced schedule of prices for DENTAL RUBBERS, we are following as closely as possible the retail price governing in London, adding the Canadian duty and a slight fraction for transportation. By a close examination of the new schedule you will see a distinct reduction in most of our Base Rubbers, and if you will further compare them with the prices of other makes of rubbers, you will find a great saving will be effected by using **Ash's Vulcanizing Rubbers**. We have led the world for many years in the manufacture of Dental Rubbers, and to-day the product is distinctly in advance and superior to any other rubbers at present upon the market.

ASH'S GUM PINK LIGHT RUBBER has never been successfully imitated, and no other pink gives so close a reproduction of the natural gum.

Do not be content to take some other brand that a salesman tells you is just as good as Ash's.

For prices and quantity rates see next page.

Ash's Dental Rubbers

From March 1st the following prices will apply on our Dental Rubbers.

NOTE.—Our Rubbers weigh 16 ozs. to the pound, exclusive of linen backing and box.

FOR COATING.

	Per lb.	5-lb. lots	10-lb. lots	20-lb. lots
New Pink, Medium.....	\$6.00	\$5.40	\$5.00	\$4.75
No. 1X Pink, Medium.....				
No. 1 Pink, Light.....				
Gum Pink, Medium.....				
Gum Pink, Light.....	5.00	4.50	4.25	4.00
No. 2X Pink, Medium.....				
English Pink, Medium.....				
English Pink, Light.....				

FOR BASE

Improved Black.....	4.25	3.80
Combination		
White for Side Blocks, etc.....		
Child's "G"		
A. E. Elastic, Dark Brown	3.75	3.35
W. Elastic, Dark Brown.....		
Whalebone No. 1, Dark Brown.....		
Whalebone No. 2, Light Brown.....		
Solid Base	3.30	2.97
Dark Red.....		
Flexible Base.....		
Dark Elastic.....		
Maroon.....	2.75	2.45
Red.....		
Orange.....		
Dark Brown.....		
Brown		
English Base.....		

SPECIAL—FOR TENDER GUMS, ETC.

	Degrees Fahrenheit	Time H.	M.	lb.
Soft Pink, for lining Palates.....	310	1	15	\$6.00
Soft Dark Red.....	310	1	15	4.25
Vela for Artificial Palates	270	6	0	6.00
Brown Weighted.....				4.25
Pink Weighted.....				6.00
Brown Repairing.....				4.75
Pink Repairing.....				6.00

NOTE.—Cash Discounts do not apply on quantity rates on our Coating Rubbers in any quantity over 5 lbs.

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An excellent preparation to recommend your patients for cleansing Dentures. It is a thoroughly reliable preparation.

Price \$2.00 doz.

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IS YOUR SOLDERING DONE ECONOMICALLY?

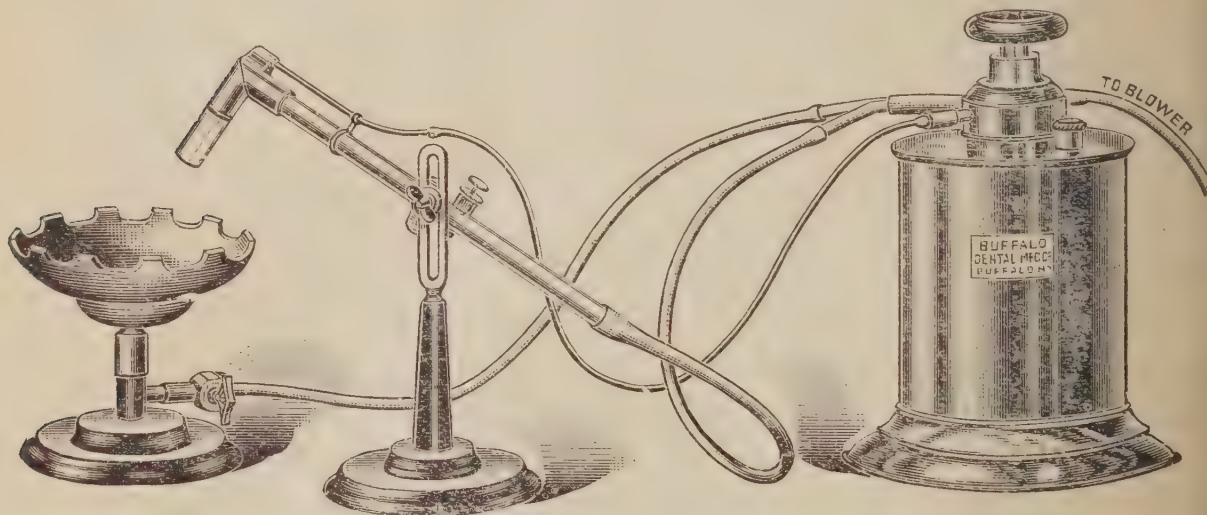
Dr. J. A. Butler, D.D.S., Cooperstown, N.Y., and Cherry Valley, N.Y., writes:—

"I noticed your "ad." of No. 45 Gasoline Generator and Blow-pipe in the DIGEST. The only reason I don't want one is, because I have one that I purchased from you several years ago, and it does the same good work "yesterday," "to-day," and possibly not "forever," but, it is good for many "to-morrows." An occasional quart of gasoline has been my only expense until now, and now I've actually got to have a few feet of rubber tubing to connect Generator, Blowpipe and Case Heater. Occasionally I have wandered from my old love and purchased apparatus of other makes. Not that I wasn't perfectly satisfied, but you remember that man's epitaph:—

*"I was well; wished to be better;
Took physic and died."*

I sold one of my improvements for half price. The rest are on the shelf covered with dust. Send me to Cherry Valley, N.Y., tubing to connect as above, also about four feet from Generator to Foot Bellows, and send bill with same, and I will remit by following mail.

This is unsolicited, and you are at liberty to use any portion of it over my signature."



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Crown and Bridge Work

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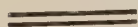
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Pyorrhea can be Cured !

Once again we have proven our claims at the
LARGEST PYORRHEA CLINIC EVER HELD.

The Hundreds of Dentists who attended the NATIONAL MEETING saw the results of the DENTINOL and PYORRHOCIDE TREATMENT IN CONNECTION WITH INSTRUMENTATION as shown on the numerous cases treated at our Cleveland Clinic.

Our Claims were proven on cases selected by Cleveland Dentists. Our Clinicians treated all cases presented by Dentists, regardless as to how far the disease had advanced.

No case was under treatment more than six weeks. Inflamed, pus discharging gums were put in a normal condition of health.

Loose teeth (when sufficient process remained), were tightened.

Every case treated was shown. Teeth with practically no process left could not be held in place without splints, but the gums were put in a firm, healthy pink condition. EVERY CASE SHOWED BEAUTIFUL RESULTS.

OUR CLINICIANS USE

DENTINOL (applied to inflamed gum surfaces and flooded into pus pockets).

THE IMPROVED D. P. SCALERS (set of 12 instruments for removing deposits).

THE DENTINOL PERFECT SYRINGE (for reaching the bottom of pockets with Dentinol).

PYORRHOCIDE (was used by all PATIENTS as a medicated prophylactic dentrifice in co-operating both in effecting and maintaining results).

The preparations are non-poisonous and non-secret, and are sold and guaranteed satisfactory at ALL DENTAL DEPOTS.

You owe it to your patients and yourself to cure diseased gums—
You can do it, and it pays.

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The barbs of Realization Broaches run close to the point of the broach. That is where they should be. That is the operative end of the broach. This method of cutting the barb close to the point is an exclusive feature of Realization Broaches. It is one of the qualities which make Realization Broaches so efficient.

Added to this is that rare combination of toughness and flexibility, which enables you to explore the most tortuous root canals without danger of breakage.

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PRICES

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Let us send you a nice Case
of two hundred Dowel Crowns

TWENTY DOLLARS

You cannot get one hundred
of any other reputable Crown
for less than

NINETEEN DOLLARS.

Added to this, Ash's Mineral
Body of which all our teeth
and crowns are made, is the
only body that can be success-
fully polished after grinding.

See some of our Moulds on pages 18-21
of this issue.

Claudius Ash, Sons & Co., Limited



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